

Customer data lifecycle management model for an IT company

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<p>The case company of this study has grown in its nine year existence, its business has changed and employee turnover has been high. The case company operating model is currently ad-hoc. The case company has started serving larger customers than before, and as a result the management of the case company has noticed that a more structured and controlled way of operating is needed. Making the changes should better serve the customer and facilitate the training of new employees.</p> <p>To approach this problem a questionnaire was sent to the case company employees to enquire their customer data storing habits, and employees own suggestions for moving in to a more structured operating model.</p> <p>The results from the questionnaire show that employees have their own way of handling the data and for example one type of data is stored in five different systems instead of one system. It also showed that an employee approximately uses 4.7 h a week to find customer data.</p> <p>Based on these findings and theory framework for the thesis a customer data lifecycle model was created to handle customer data. In addition to the illustrated model, it is defined what data is stored in to which system, and who is responsible for storing the data.</p> <p>Results of this thesis are general and can be applied to the case company or any other company that is in similar situation.</p>	
Keywords Lean, ITIL, Holacracy, CRM, CDLM (customer data lifecycle model)	

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1 Introduction

The company was started in 2008 and during its 9 year lifespan lot has changed. The company has been in Panasonic PBX business as a vendor for Finnish telecom companies. The company has had 3 Elisa Oyj representatives selling Elisa telecommunication solutions. In addition to the aforementioned businesses the company also made its business by selling servers, PC's, server and PC management services, firewall services, third party junkmail filters, webhotel, DNS services, internet connections and backup services.

The case company sold the PBX-business and doesn't have anyone selling Elisa solutions anymore. The company specialized in server virtualization and backup services from the company's own devices. They also do datacenter services from their own capacity and from vendor capacity. In addition to the company's own datacenter services they have started providing customers with Microsoft Azure services. They also have their own internet connections in four business parks where the company provides the business park companies with fiber connection and also use layer two connection when building connection between the datacenter and customer site. The company's portfolio has grown also with Microsoft Office 365 services which are a norm when licensing end user devices. The company still sells third party internet connections and PC's.

The turnover has grown from 2009 1,8M to 2016 5,5M. The lowest employee count has been 15 in 2010 and now it is 21. There is still five of the company founders working in the company and three people who have been working in the company five or more years. The turnover in rest of the personnel has been high, approximately 30-40 people. The turnover has raised the question about the operating models and how to train new people to handle, find and interact with customer data.

The company has had four different CRM systems, three different accounting systems and four different work management systems. The company is currently using Autotask for CRM and work management and Netvisor for accounting. Autotask has been in use for four and a half years and Netvisor for six years. The company also started using an ecommerce portal in the beginning of 2017. The ecommerce portal was in use briefly in 2012-2013 but was rejected because of low customer interaction versus monthly expenses related to the portal.

The company has had a colourful history and it has in some cases legacy information scattered across the old systems this has raised the question of operating models. The current model is

ad hoc and the company is struggling to get out of this model and into more process-based model. In addition for the information being scattered through the legacy systems the company currently has multiple platforms for handling customer data but no real management model in place.

The company currently has five different departments / teams. Sales, Servicedesk, Network operation center (NOC), Network and Datacenter. The company is using variety of different systems: Autotask, Kaseya, Netadmin, Logicmonitor, Netvisor, Syncplicity, ecommerce portal.

Purpose of the study

Purpose of this study is to create a customer data lifecycle management model and deploy it within the company. Hypothesis is that implementing the customer data lifecycle management model will bring much needed structure to the company and it'll increase employee and customer satisfaction in the long run.

Research problem

Could customer data processing be clarified in the case company by systematic customer data lifecycle model

Objectives of the study

The Aim is to eliminate waste by creating processes and roles for customer data handling find out where employees are currently retaining the data and based on these findings create a model for handling customer data from the time the customer is entered into the company's system to the time when the customer relationship ends.

Research questions:

Question 1: How is the customer data retained currently?

Question 2: What should be done to make the customer data easier to handle and up to date?

Question 3: What roles and processes are needed for handling the customer data so that the customer information is easily accessible and through this the company can serve the customer better

Research Approach and Methods:

The approach used in this thesis is constructive research. Data is collected on the current customer information storing habits of the employees. The data was collected through a

questioner using surveypal survey software. Through the collected data the locations for storing and handling customer data was determined. Other aspects and methods for handling and communicating the data will be decided together with the stake holders. After the model is done and accepted by the stakeholders it will be put in to practice together with the company Administration.

The customer information is scattered between the different platforms and it is not always easy to find. Part of my job is to keep the customer information up to date, which at the moment is proving to be difficult because every bit of information is not going through me. As a personal motivation I'd like to create the model where I can go to the responsible parties and ask for the data or find it myself easily.

2 Data collection and handling

To get a better idea on how different kind of customer data is handled by the company's employees. The collected data should help us see how the employees handle the data currently and based on the results it should be possible to pin point wasteful behavior and acceptable behavior in customer data handling. Collected data will be used to create a unified model for the company to handle customer data.

The data was collected through a questionnaire using a web survey software called Surveypal. The data was collected anonymously to get honest answers from the employees. The questions were comprised of multiple choice questions and open questions.

General description of data collected in the survey

- Where the employees currently store different customer data and why
- Do the employees update the customer data after it is initially added to the CRM?
- How the information is passed on inside the company?
- What are the employees' thoughts in current methods in customer data handling?
- How the employees act when handling sensitive / confidential customer data?
- How much do the employees use approximately time weekly for searching customer data?

The questionnaire was sent to the employees of the following departments inside the company:

- Sales
- NOC
- Service desk
- Network
- Datacenter

Finance department was left out of the data collection because they only process information that is processed through other departments and is not considered important regarding this study.

The research questions can be found as appendix 1. The data was collected between 29th of May 2015 through 19th of June 2015.

The Multiple choice questions were transformed in to diagrams and the diagram information was changed from random order to descending order. Pertinent open answers were picked and they are presented in chapter four data analysis.

3 Theory framework

The main subject areas of theory in this thesis are Lean, ITIL, Holacracy and customer relationship management. Applying these theories that have structured and unstructured processes and management models it should be possible to create the best model for the case company to operate.

3.1 Lean

During the company's existence the employees have always done things their own way and haven't really shared the information with others. This in turn caused that if someone else needed to get information about for example a customer's IT-environment they had to do some detective work to find out the correct information and usually had to ask the person who had worked on the environment previously. This is not an optimal way to conduct business. It wastes resources and the customer's time. The National Institute of Standards and Technology (NIST) in the United States defines lean as "a systematic approach to identifying and eliminating waste (non-value-added activities) through continuous improvement by flowing the product only when the customer needs it (called "pull") in pursuit of perfection." (Sarkar, 2007, p1). Origins of Lean concept from Toyota Production System and there behind the concept was Taiichi Ohno. The concept was demystified for the masses by James Womack and Daniel Jones in their 1996 best-seller *Lean Thinking: Banish Waste and Create Wealth in*

Your Corporation. This book enabled the possibilities that have come since its release in the field of lean (Sarkar, 2007).

The company's current data handling methods are creating redundant work or waste. Lean defines eight different types of waste as follows:

The eight wastes of lean are:

“

1. Waste of overproduction. This is processing more or sooner than required.
2. Waste of motion. This is movement of individuals that is unnecessary for successfully completing a job in a process.
3. Waste of inventory. This is when there are items or supplies in the process more than what is required for single-piece flow. In a service setting this would mean more supplies or items than required as single-piece flow is often not possible
4. Waste of transportation. This refers to movement of materials, which is more than just time in processing. Please note that waste of transportation pertains to movement of materials and not people.
5. Waste of waiting. This refers to individuals and items being idle between operations. This waste is quite evident in setups wherein the loads of process associates are not balanced
6. Waste of underutilized people. This refers to the abilities of associates/employees in a process not being utilized to the fullest. Very often we undermine the creative
7. Waste of defects. This refers to waste that occurs due to errors and not getting an item or product right the first time out in a process. Due to the errors, the item or the product needs to be reworked.
8. Waste of over processing. This refers to efforts that add no value for the customer

“

(Sarkar, 2007, p16-18)

From these eight wastes of lean following wastes are seen in the company's daily work and should be dealt with: waste of motion, waste of inventory, waste of waiting, waste of underutilized people. To make the change work at the company the whole company must participate in the change. Like the implementation of lean also the customer data lifecycle model needs the participation of people from all levels of the company (Sarkar, 2007). A model for handling customer data and roles and responsibilities for the company will be created. The company management has to be committed to the model and the example has to come from top

down. “The role of the top management team is more directional and strategic in nature; members at the lower levels of the organization will have more hands-on involvement in improvements” (Sarkar, 2007, p24). To avoid ambiguity the roles at all levels of the organization will be clearly stated in the created model (Sarkar, 2007).

It is in the company’s interest to eliminate waste along the entire value stream. Not just at isolated points. This will allow the company to respond to changing customer desires better and make information management much simpler and more accurate (<http://www.lean.org/>).

Debashis Sarkar tells in his 2007 book: *Lean for Service Organizations and Offices: A Holistic Approach for Achieving Operational Excellence and Improvements* that “Focusing on improving broken processes will not deliver the desired impact. Create ownership for end-to-end processes (process loops) and work on improving them. Often, service organizations improve broken processes. Because of this the improvements do not positively impact the customer.” (Sarkar, 2007, p28) The customer data life cycle model will be built from different processes loops that will have ownership. This will help to maintain and operate the model.

It is important to add non-value-added inspection work to the created processes and the model. This is because unless the process is completely fail-safe, a process operator could make an independent decisions about the one correct way to perform a standard work task (Hobbs, 2010). The inspections can be added by having meetings with department heads first on a weekly basis and when time passes on the meeting can be reduced from weekly to semi-monthly and from there to monthly and quarterly. This way the company can ease the employees to the new way of working and make corrective measures if problems occurs.

The company has to understand that it is important to eliminate communication barriers inside the company. This is critical if the company wants to achieve shared objectives. In this case the new model and roles. Open communication has to be established between the different departments and the head of company. The company must also understand that this doesn’t happen overnight, but if the company wants to implement the model and roles successfully, eliminating them can’t be avoided. (Hobbs, 2010)

To further improve organizational communication the company should look into eliminating self-imposed organizational boundaries. The company has departments and the “organizational boundaries often create silos of expertise and informational fiefdoms that are resistant to change (Hobbs, 2010). This has to be taken into consideration when creating the roles that

they won't further the isolation between the departments too much. The company doesn't want be in a situation where: "...information (electronic or paper) enters an organizational silo, the process becomes controlled by the people in the silo. Visibility is zero to other functions. Administrative turf battles, the need for authorizations, poor conformance to standards, bottlenecks, scheduling problems, and lack of feedback between processes caused by organizational silos..." (Hobbs, 2010, p440). To avoid this the department heads attitudes should be monitored during the implementation process.

"In Lean, the best way to evaluate improvement is by monitoring performance measures such as market share growth, margin improvement, on-time delivery, and quality metrics rather than concentrating on 100% utilization of resources. (Hobbs, 2010)" To monitor performance in this case a similar questioner will be made as used in this thesis and sent to the employees quarterly to see if information storing habits change and time used for searching customer data weekly goes down from the first result.

3.2 ITIL

Roles and responsibilities are one of the area where the case company wants improvement and using ITIL and its library of roles and role key activities is helpful in this case. ITIL is best defined as:

"ITIL® is a globally recognized best practice methodology for IT service management that is used all over the world by leading organizations. ITIL® ensures that their IT services are aligned to the needs of their business. ITIL® provides trusted guidance on how businesses can use their IT services to support their goals and facilitate business growth."

(<https://www.itil.org.uk/>)

Model for roles and responsibilities is taken from a document called ITIL Roles Description. The full document can be accessed on: <https://www.scribd.com/document/122536379/ITSM-Role-Description>. Roles and responsibilities for the case company are defined in chapter 6.5.

First all the roles are listed on the left side of the table and the description of the role is given on the right side of the table, like shown in table 1:

Role	Description
Service Manager	Represents all ABC provided services to ABC and is responsible for all Service Support and Service Delivery actions taken to ensure they meet ABC business needs and IT Requirements. Responsible for overall ABC Customer Satisfaction.
Service Owner	Represents an ABC provided service (or set of services) to ABC and is responsible for all Service Level Management activities for that (Those) services.

Table 1. Role and role description. (Skribd, n.d., p2)

This makes all the roles easy to see in one document. In addition to this a role card is made displaying the role name on top of the table, role description on the left side of the table and roles key activities in the right side of the table, like shown for “Service Owner” in table 2.

Service Owner	
Description	Key Activities
Represents an ABC provided service (or set of services) to ABC and is responsible for all Service Level Management activities for that (Those) services.	<ul style="list-style-type: none"> • Provide input for maintaining the catalog description of existing services offered by ABC • Assist with actions to negotiate, agree and maintain SLAs in conjunction with ABC • Assist with actions to negotiate, agree and maintain OLAs within ABC IT support areas and business units • Analyze and review actual service performance against SLAs and OLAs for service areas under scope • Provide input and assist in development of regular reports on service performance and achievement to the Service Manager • Review SLA targets and metrics where necessary • Review OLA targets and metrics where necessary • Review third party underpinning agreements where necessary

	<ul style="list-style-type: none"> • Identify appropriate actions to maintain or improve service levels • Initiate and coordinate actions to maintain or improve service levels • Act as a coordination point for any temporary changes to service levels
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Table 2. Role, role description and role key activities. (Skribd, n.d., p15)

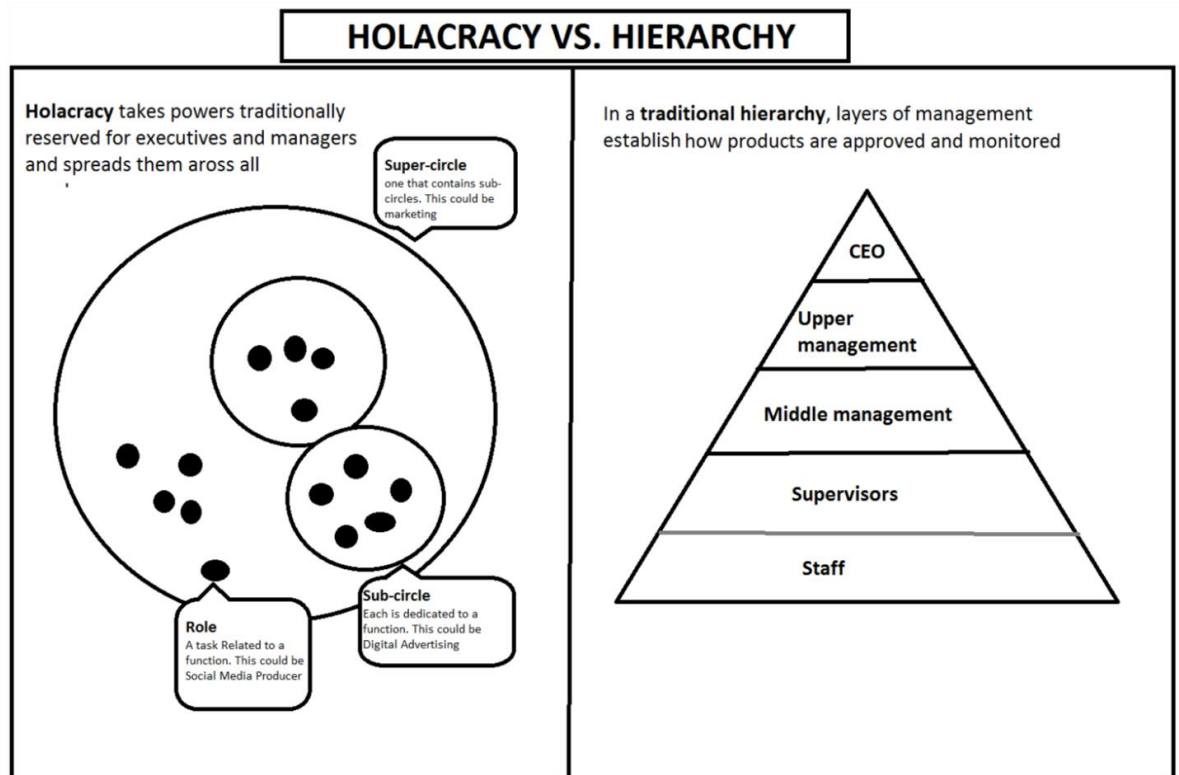
This way the roles are easy manage in word or excel document and changes can be made easily and distributed to role owners. One employee can have multiple roles (Anonymous, 2012).

3.3 Holacracy

When creating the roles it must be made clear that multiple roles can be assigned to employees. This will allow employees lot more freedom to express their talents (<https://www.holacracy.org/how-it-works/>). This is how it is done in Holacracy. Holacracy is defined as follows:

“Holacracy® is a self-management practice for running purpose-driven, responsive companies. By empowering people to make meaningful decisions and drive change, the Holacracy practice unleashes your organization’s untapped power to pursue its purpose in the world.” (HolacracyOne, n.d.)

The case company could adapt some Holacracy practices when considering decision making and responsibilities. The roles should be built so that the employees are made responsible for their actions in daily work and department heads act more as guides not leaders for the department employees. Picture 1 Holacracy vs. hierarchy shows the differences between the two.



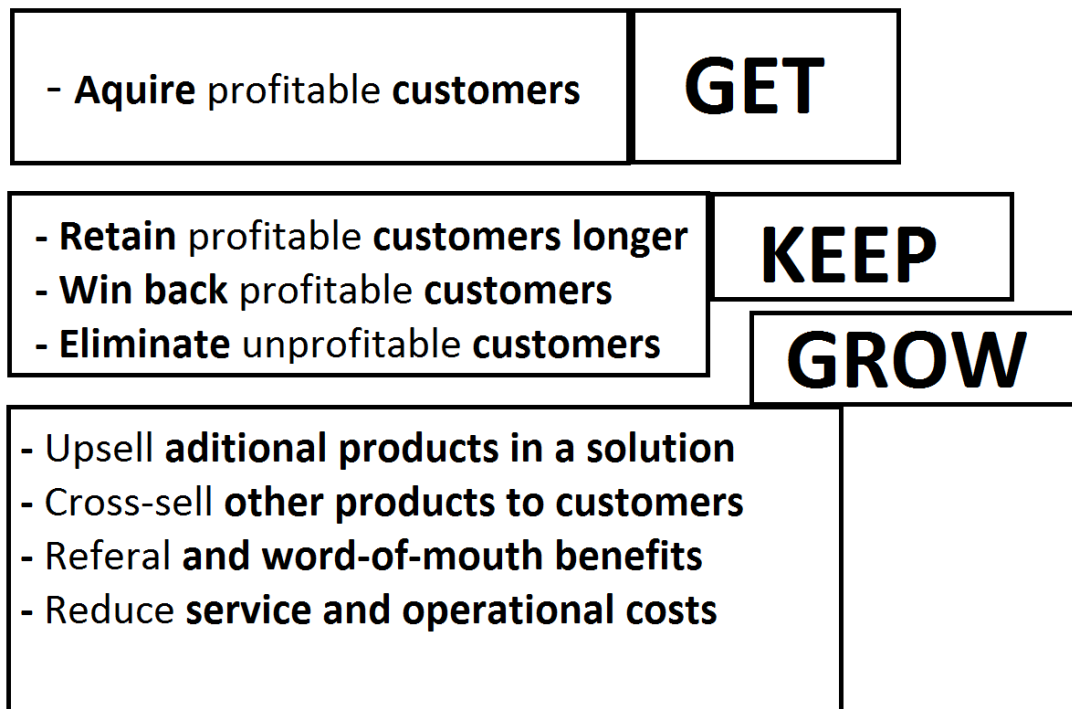
Picture 1. Holacracy vs. hierarchy. (Felloni, 2016)

Picture 1 shows how Holacracy is different from hierarchy. The left side of the picture shows how in Holacracy the powers traditionally reserved for executives and managers are spread across all. The large circle is a super circle that represents marketing in this example and it is called a super-circle. The super-circle has sub-circles that are dedicated to a function. In this example the sub-circle represent digital advertising. Inside the super circle and sub-circle there are roles. The roles are marked as black dots in the picture and it represents a task related to a function. On the right side of the picture a traditional hierarchy pyramid is shown where layers of management establish how products are approved and monitored from the top of the pyramid where CEO is to the bottom where the staff is.

But unlike in Holacracy not all hierarchy should be eliminated. CEO and upper management should exist as a guiding entity. Departments could be given ability to act within certain parameters and management wouldn't get involved with the decisions made inside the department or role.

3.4 Customer relationship management

In the book *Managing Customer Relationships: A Strategic Framework* they talk about increasing the value of the customer base shown in picture 2:



Picture 2. Increasing the value of customer base. (Peppers, Rogers, and Kotler 2016, p33)

The Company's main customer base consists of customers that uses one or several of the company's service products. These customers are profitable. As shown in picture 2 increasing the value of customer base, you have to eliminate unprofitable customers. The company used price increase for the unprofitable customer base, some gave notice after the price increase and some of them have agreed to the new prices thus making them profitable again.

3.4.1 Customer value

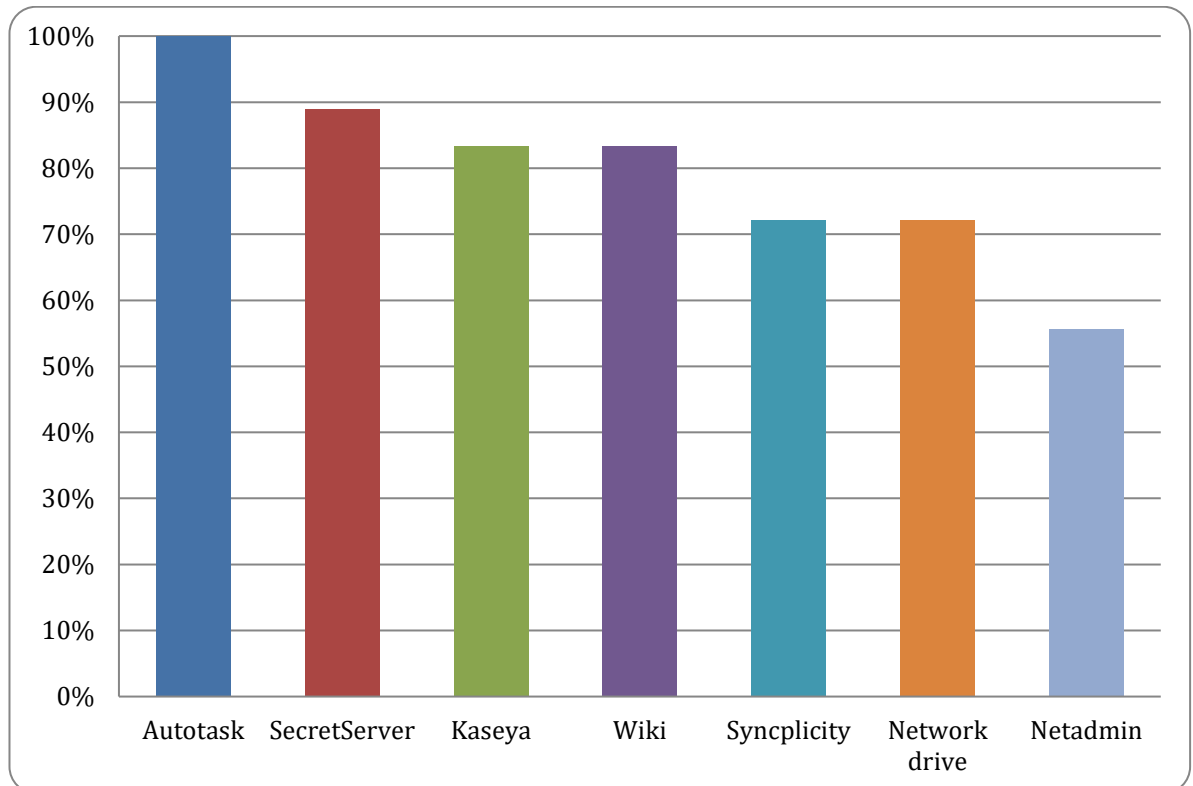
The Company needs to identify customers by their value. This way the company can prioritize its competitive efforts by ranking customers from least valuable to most valuable (Peppers, Rogers, and Kotler 2016, p181). After identifying the customer, the company could divide customers among sales teams for example highly valuable customers could be managed by enterprise team with the idea of increasing the profit of these customers. The least profitable customers could be managed by junior sales team which is mainly engaged with new customer acquisition but could keep the least profitable customers in rotation and contact them from time to time.

4 Analysis of the data

Data analysis is divided into eight sections. 4.1 Basic questions are dealing with what systems are the employees using and in what systems do they update customer information to. It also deals with what customer information do the employees update and if the information is up to date in the systems. Chapter 4.2 answers to questions about employee's way of handling the customer data. Chapter 4.3 shows how the employees store data across the different systems. Chapter 4.4 shows how familiar employees are with the company security regulations. Chapter 4.5 deals with employee attitudes towards roles and responsibilities and whether to have them as part of their job. Chapter 4.6 shows how much time an employee spends searching for customer information during a week. Chapter 4.7 employees give their own suggestions for handling customer data and finally chapter 4.8 concludes the data analysis.

4.1 Basic questions

Basic questions give answers for how much the employees are using the different systems and how much the employees update customer data do in the systems. They also gives answer for what information is not up to date in the systems

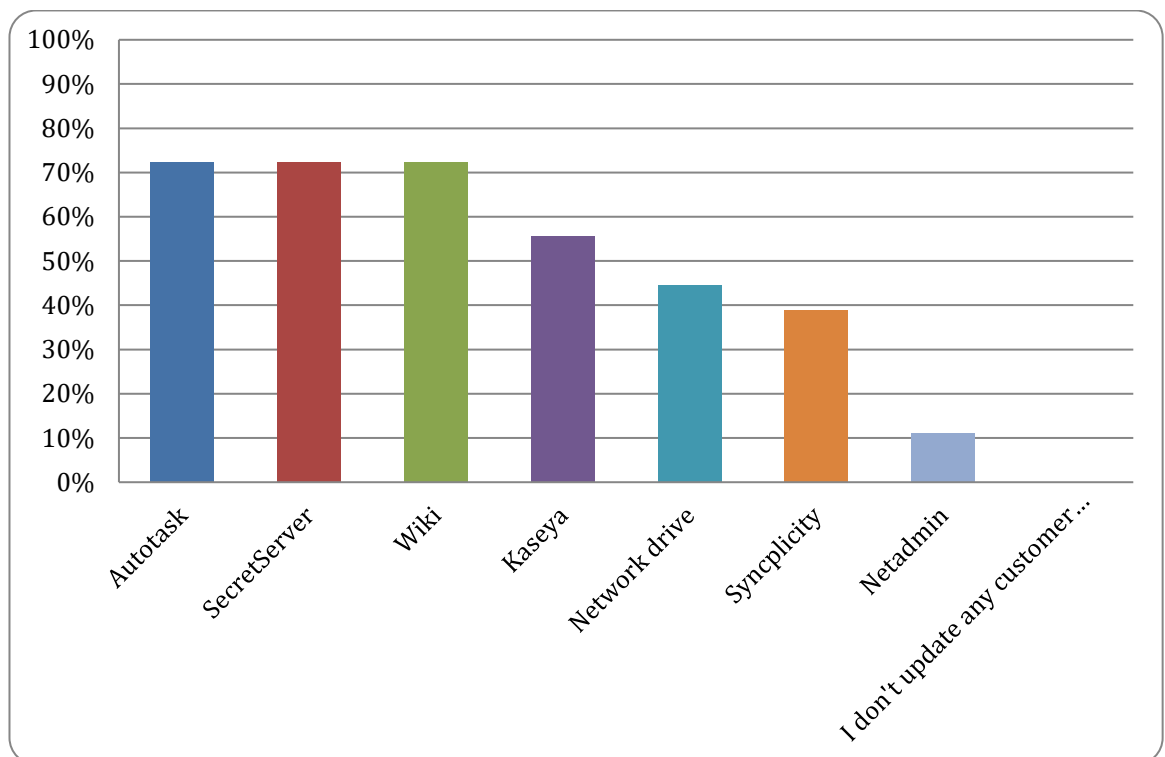


Graph 1. What systems the employees are using.

Graph 1 shows what systems are used by the employees. Everyone in the company is using Autotask with 100% usage. Second most used is SecretServer with 88.9% usage. Kaseya and wiki are tied in third place with 83.3%. Syncplicity and network drive are 4th most used with 72.2% usage and finally Netadmin is the least used system with 55.6% usage.

Everyone is using Autotask. Autotask is the heart of the company's operation. It has ticketing system that is used by the company's service desk and technicians. It also houses opportunities and sales orders for the sales team to use. SecretServer, Wiki, and Kaseya is used mainly by technical staff. Sales team rarely uses them. Syncplicity is mainly used by sales team and administration. Network drive is mostly used by technical staff but is also accessed by administration. Netadmin is only used by the network staff.

Next is Graph 2 that shows in what systems the employees update customer data.



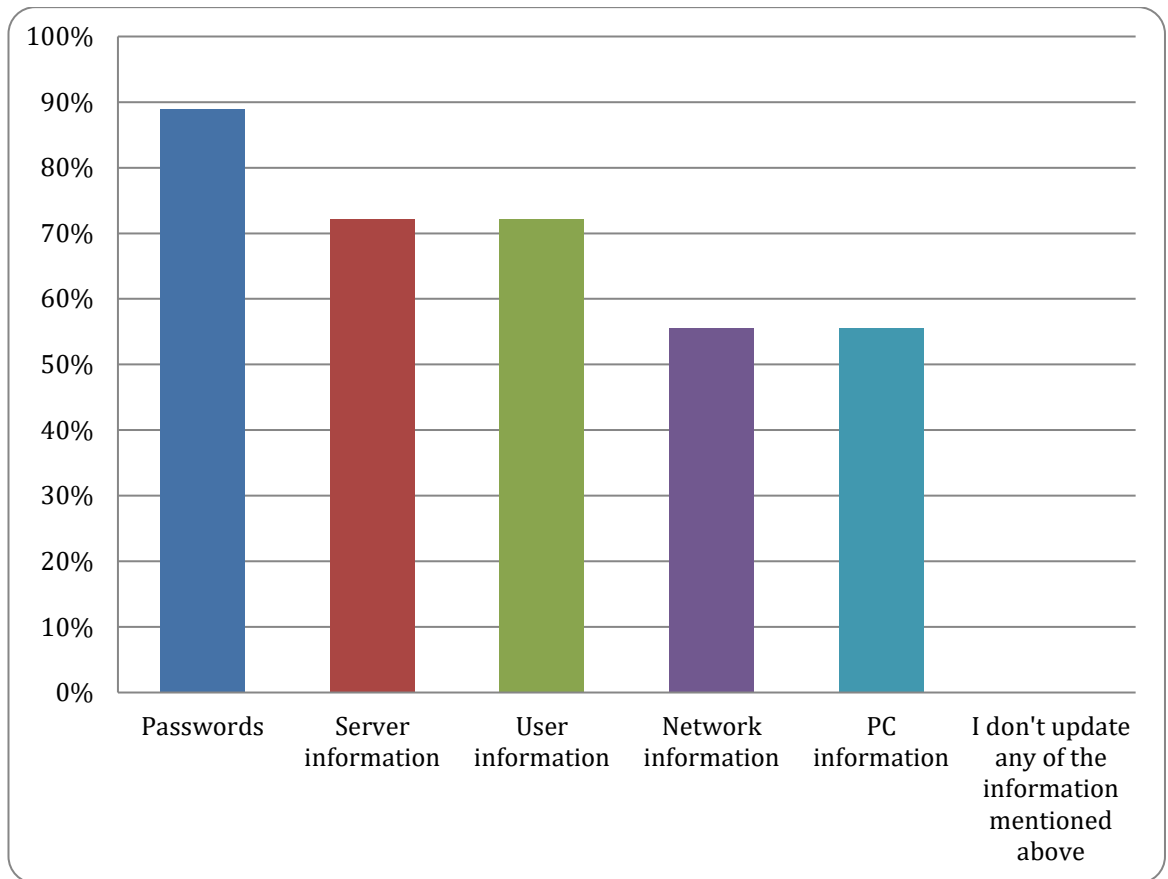
Graph 2. Different information employees update into the systems.

72.2% of the employees update customer information to Autotask, SecretServer and Wiki. 55.6% update customer information to Kaseya. 44.4% to Network drive, 38.9 to Syncplicity and 11.1% to Netadmin. Nobody selected "I don't update any customer information".

The information is stored across multiple platforms. Even though Autotask was the most used system, with everyone is not updating information in it. SecretServer and Wiki are higher here partly because company has more technical staff who use them more. This should be looked at because it would in company's best interests that everyone would update / add customer information in to Autotask.

For example changes in customer information like: address, contact person information. At the moment there has been situations where a technician is working on a ticket that has come from someone in the customer organization that is not in Autotask and as a contact person for the ticket they use a random person from the customer organization or leave the contact information field empty. This creates unnecessary actions if for example the customer CFO wants to know who has ordered the job. If the information is wrong in the ticket header and this information is given to the customer CFO they'll check it with the informed contact person and get back to us because the person given has not ordered any work. After this the company has to check the ticket body and / or the comments and if the information can't be found there it has to be asked from the technician who worked on that ticket and hopefully they'll remember who they have been in contact with. This of course can be difficult because sometimes the ticket can be worked on one month or more prior to the enquiry.

Graph 3 shows what information the employees update

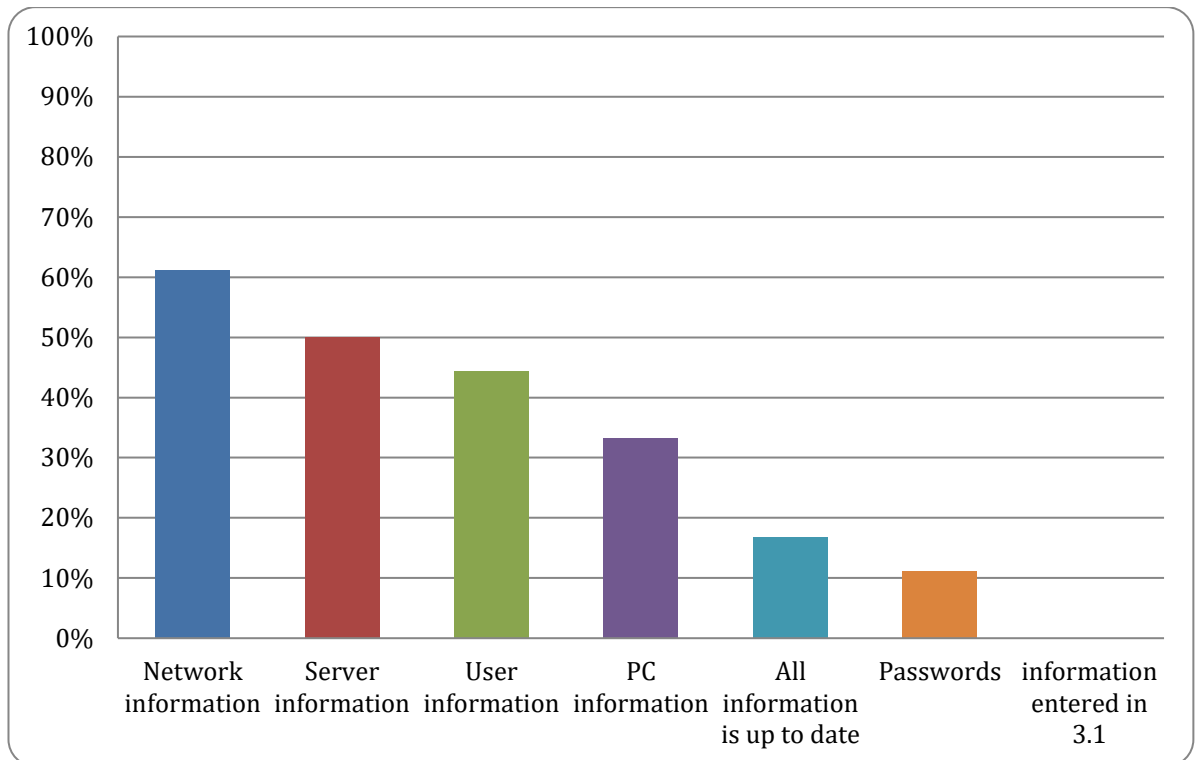


Graph 3. What information employees update.

The most updated information is passwords with 88.9% of the answers. Second most updated information is server information and user information with 72.2% of the answers and third most updated information is Network information and PC information with 55.6% of the answers. The answer “I don’t update any of the information mentioned above” was not picked.

The information is updated across multiple platforms and everybody has their own place where they update the data according to their job activity. But as discussed in previous question User information should be much higher than little under 70% of employees

The following graph 4 shows what customer information is not up to date in the system.



Graph 4. Out of date information in case company systems.

The least up to date information is Network information with 61.1% of the answers. Server information is second least up to date information with 50% of the answers. User information (44.4%) and PC information (33.3%) are third and fourth least up to date information. Passwords are the most up to date information according to employees with only 11.1% saying it is not up to date. There is a deviation here because 16.7% of the employees say all the information is up to date. Information entered in 3.1 did not get any votes.

As seen in the answers gathered in question three everyone who answered is updating information in to the systems, but what is alarming is it seems that all the information is not up to date. From these the most alarming is network information, Server Information and user information which are not up to date according to over 50% of the employees who answered. This information is something that should be 100% correct especially the PC and server information.

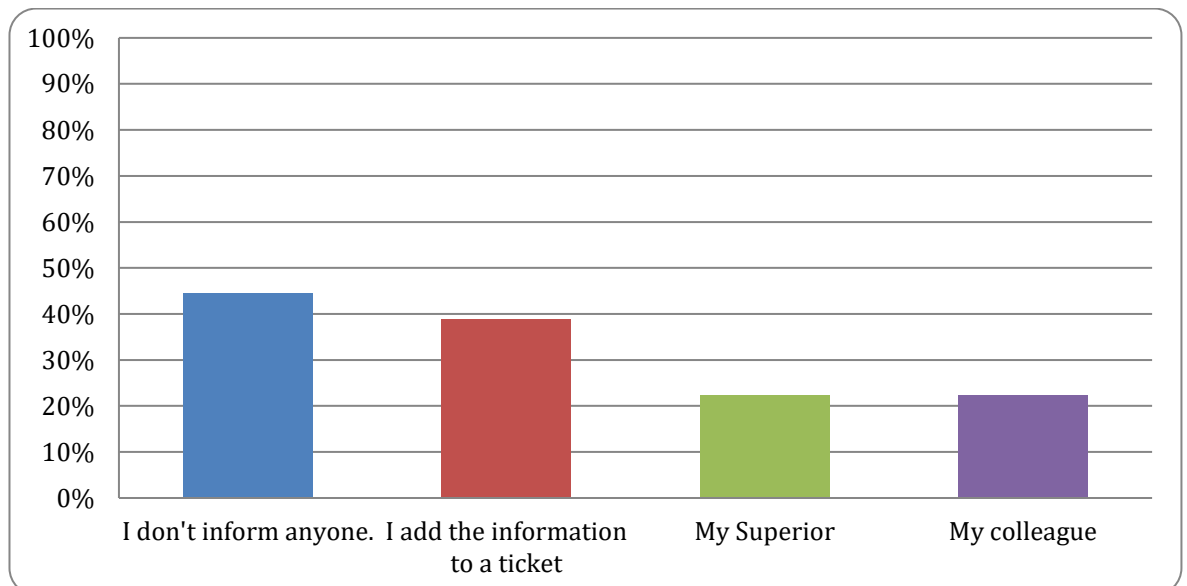
This information affects billing and could affect revenues negatively if the company bills the customer less than it should or affect customer satisfaction negatively if the company bills the customer more than it should. There is also negative implications when considering service calls and other customer interaction if employees start to work on something based on wrong information or no information. This will also impact company time consumption negatively if

employees have to “hunt” for the right information from the systems, other employees or the customer during a service call. Creating roles and responsibilities for handling these information and making it a norm in the way the company works everyday could be the solution here.

Next is chapter 4.2 data handling and first graph is graph 5 and it shows who the employees inform if they change customer information in the system

4.2 Data handling

This chapter shows how the employees handle customer data and how if they handle sensitive customer data. It also shows how employees handle sensitive data.



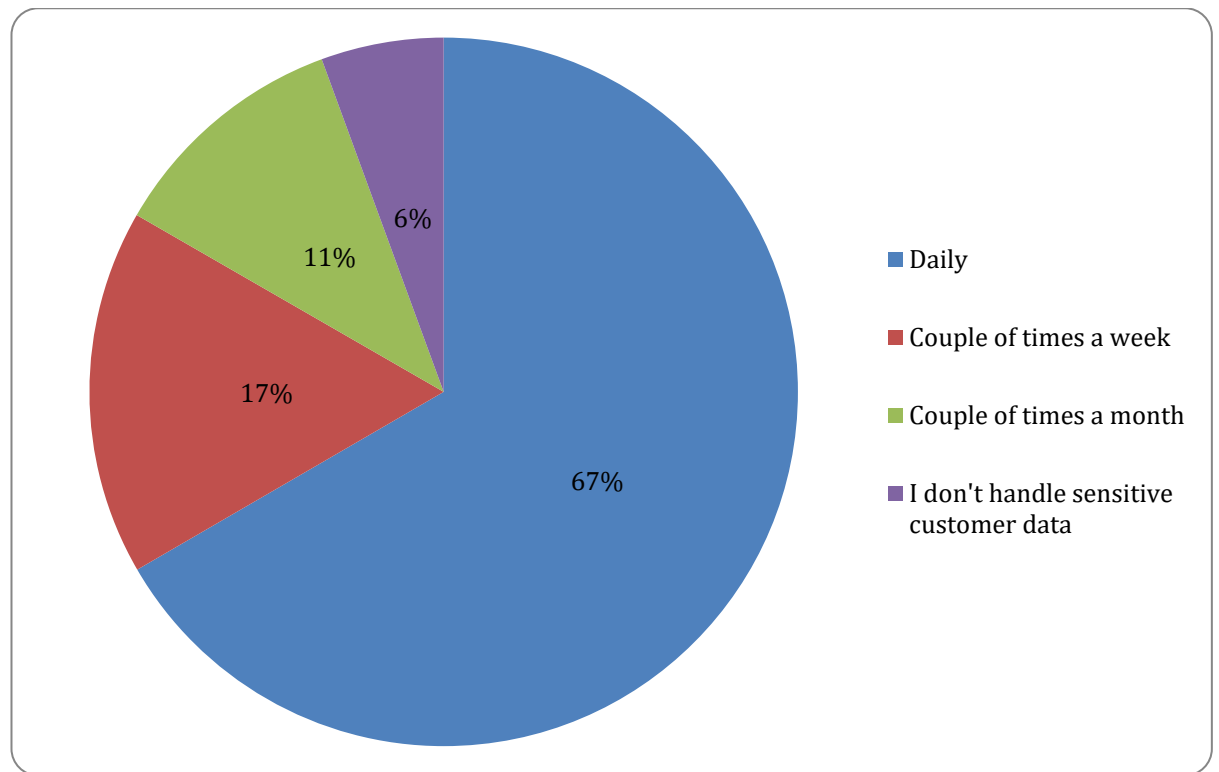
Graph 5. Who do the employees inform if they change customer information in the system.

44.4% of the employees don't inform anyone if they change customer information in the system. 38.9% of the employees log the information to a ticket. 22.2% inform their superior and 22.2% inform a colleague.

44.4% of the employees that answered don't inform anyone if they change customer information in the system. This must be taken in to consideration when creating new processes. Things to consider are how to make information change information known to everyone. Should there be or is there already some sort of auditing built in to the system where customer data is handled. Does employees know how to access this information? It should be made a norm that employees always check preordained location/locations which has the up to date

information. Maybe it would be best if major changes would be announced companywide but smaller changes and additions not. This way the process would not be burdened too much.

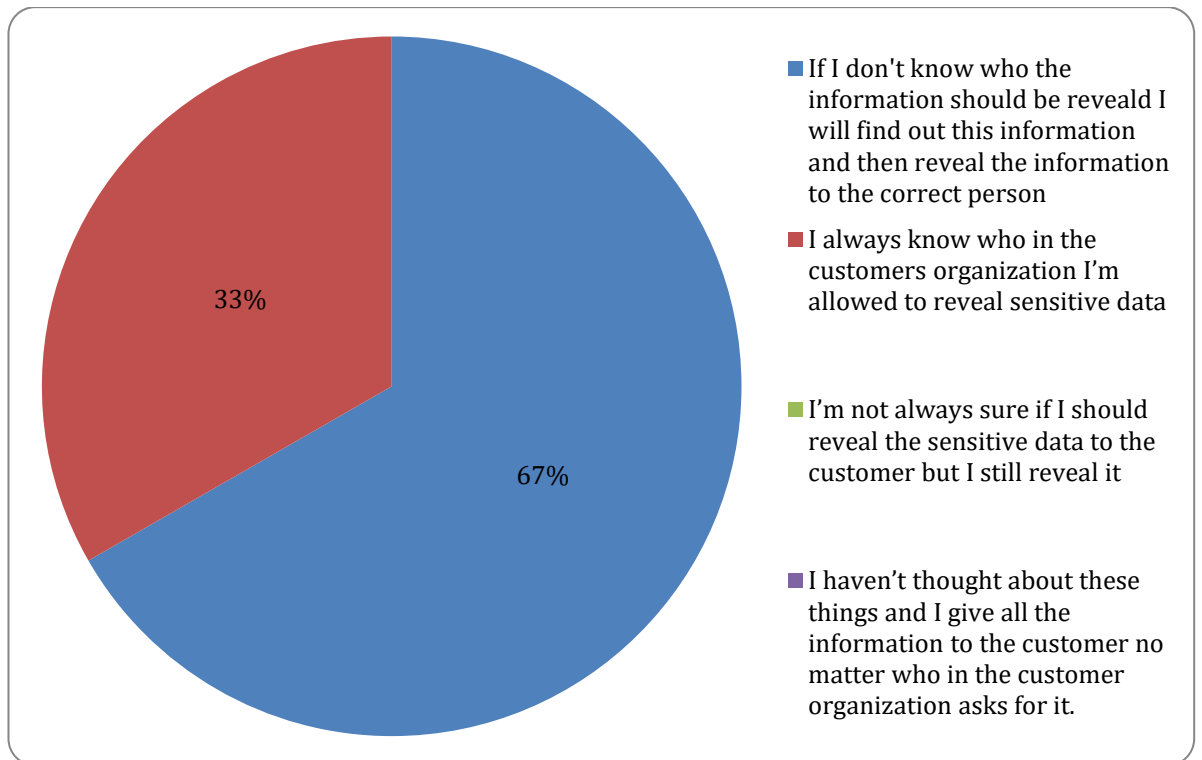
Graph 6 shows how often employees handle sensitive customer data.



Graph 6. How often does the employees handle sensitive customer data.

67% of employees handle sensitive customer data daily. 17% couple of times a week. 11% couple of times a month and 6% don't handle sensitive data at all.

The following graph 7 shows how employees handle sensitive customer data.



Graph 6. How employees handle sensitive customer data.

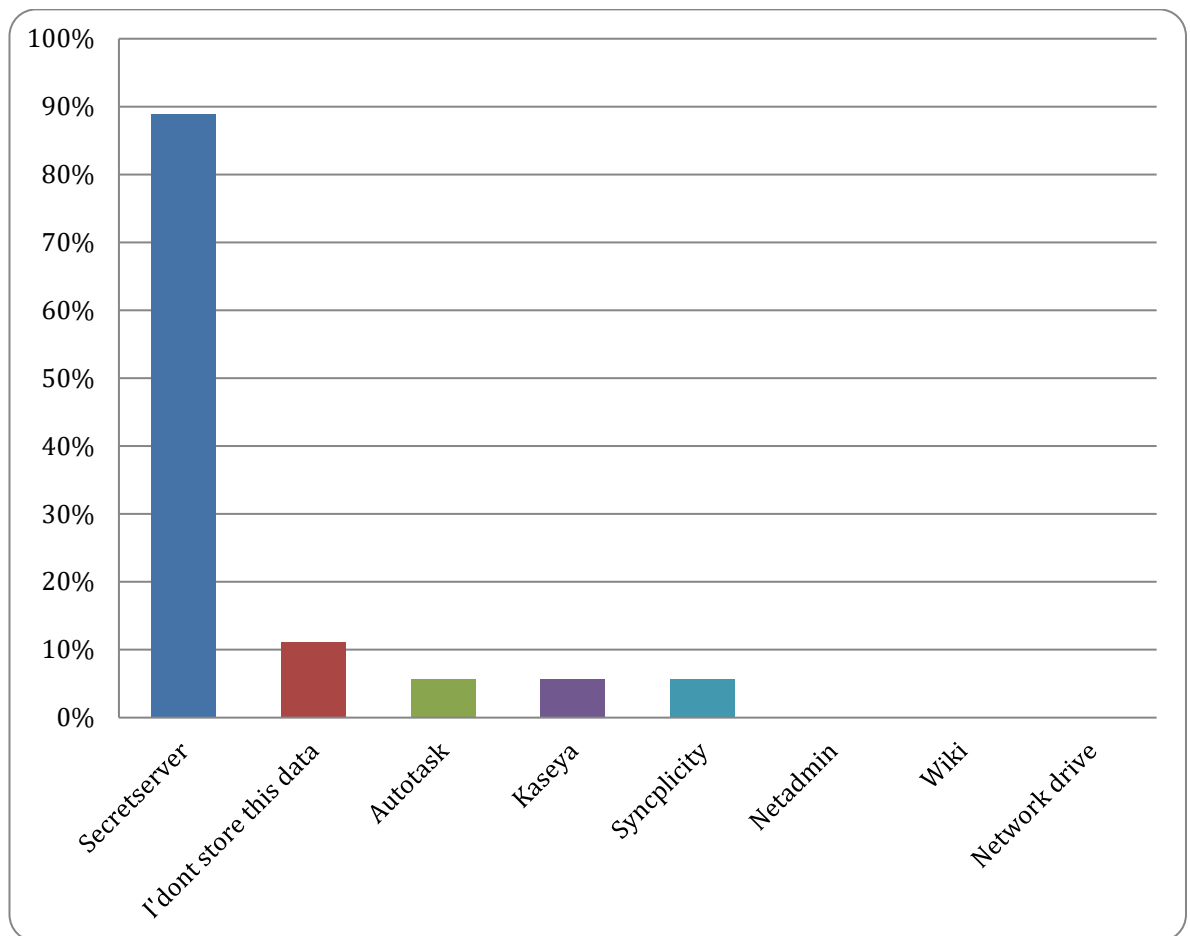
67% of employees will find out who the correct person in the customer organization is if they don't know who they can reveal the sensitive customer data. 33% of the employees always know who the correct person in the customer organization is.

Sensitive customer data handling seems to be handled correctly. This should be written up in the company security regulations.

Next is chapter 4.3 data storing and first graph is graph 8 and it shows the systems employees use to store passwords

4.3 Data storing

This chapter shows how employees store different customer data to the various company systems.



Graph 8. Wwhere employees store passwords.

Passwords are mostly stored to SecretServer with 88.9% of the employees choosing it as the place they store passwords. 11.1% of the company Employees doesn't store passwords at all. Autotask, Kaseya and Syncplicity are all used by small percentage 5.6%. Employees answered to the question "Why do you store the information here? Be specific" with answers like:

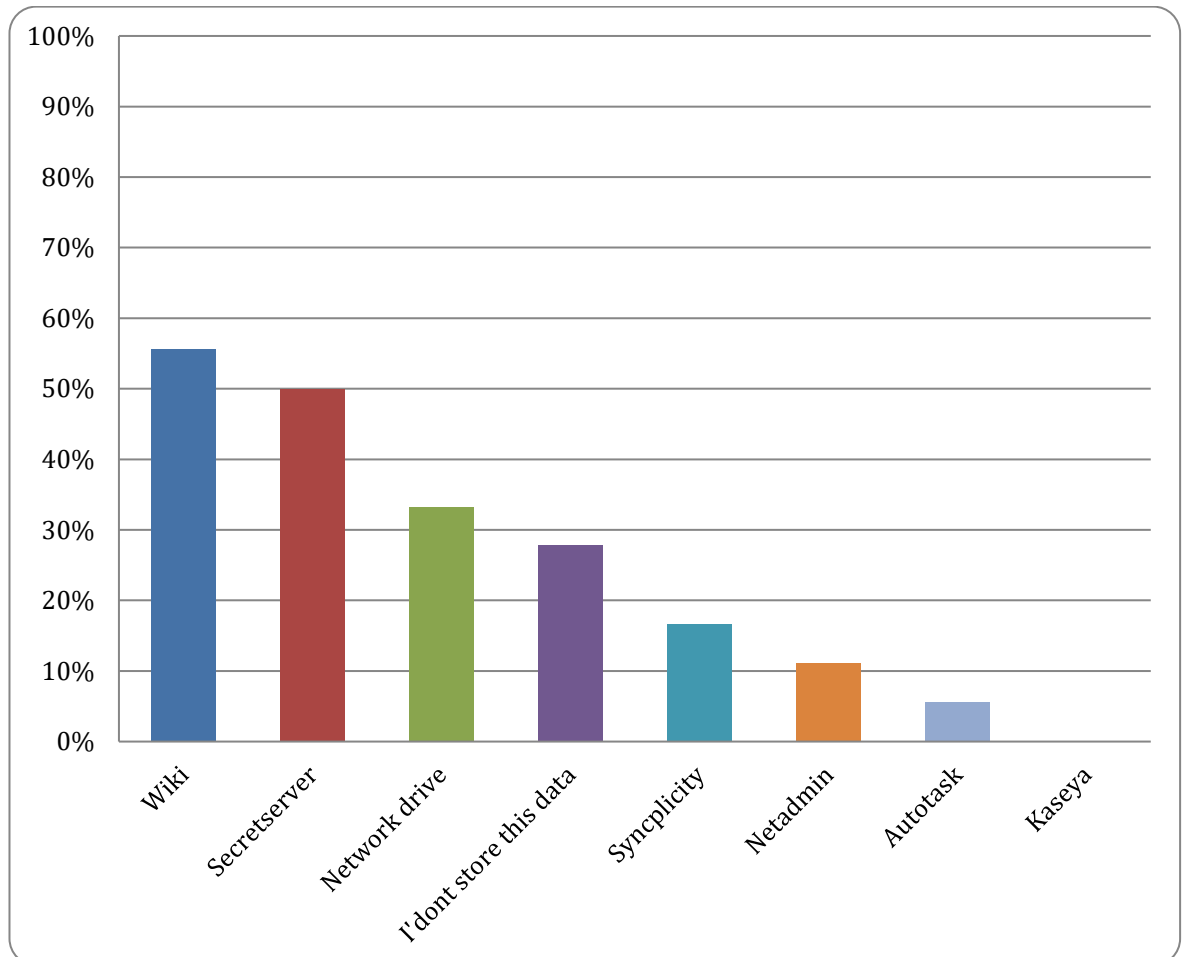
"Because this system stores passwords in a secure fashion, and not in clear text. The site is also not accessible from outside the company network."

"Secretserver is made for password information so."

"These systems have features to store passwords securely. I don't trust other systems security enough to let them handle password data."

From all the categories, this had the clearest answer of all. Answers like this “Because the aforementioned place is meant for this data.” This tells that employees are accustomed to using SecretServer as the go to place for passwords. Few employees picked different places but with instructions everyone will store the data in SecretServer.

Graph 9 shows where employees store network information.



Graph 9. Where employees store network information.

Network information is scattered throughout the systems except Kaseya. 55.6% of employees store it in Wiki, 50% of employees store it in SecretServer, 33.3% store it in network drive, 16.7% store it in Netadmin and 5.6% store it in Autotask. 27.8% of employees don't store this data. Employees answered to the question “Why do you store the information here? Be specific” with answers like:

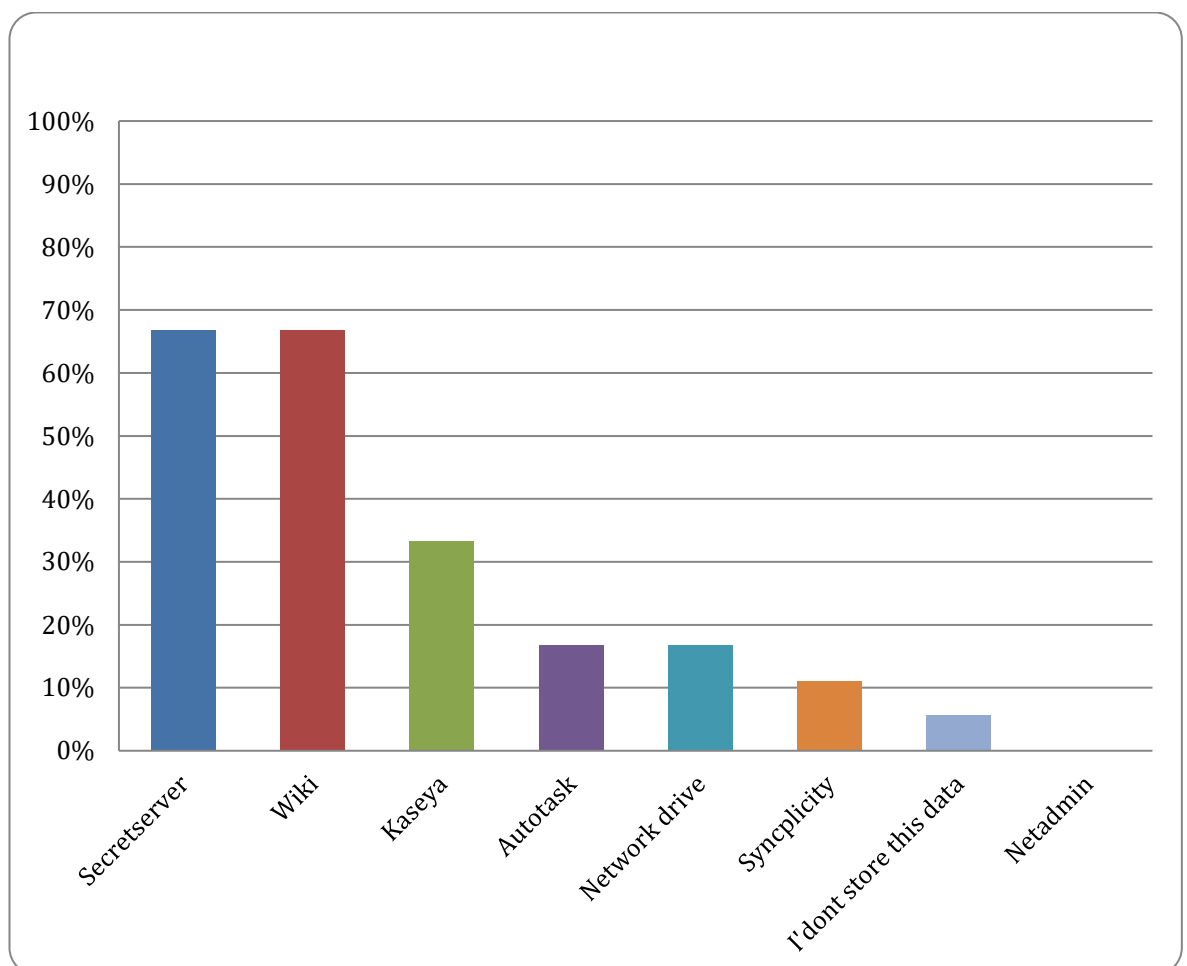
“They are the usual places people go looking for information (as far as I know, didn't even know about the network drive).”

“Problem is that we don't have standardized ways to represent Network data. So I usually write things down to Excel and Visio files.”

“Some minor network info is stored in Autotask tickets - expansive and detailed information will be stored categorically in Secretserver and Wiki. Again, standard documentation process”

Here we can see that there is no fixed place for the network information and no instruction on how to store the different information. Netadmin should be the go to place for the network information and network drive should have the network visualizations done with Visio. For making this information storing and finding more clear and accessible is to have roles and responsibilities written out for our network team and have fixed places for storing the different network data.

Graph 10 shows where employees store server information.



Graph 10. Where employees store server information.

66.7% of employees store server information to SecretServer and Wiki. 33.3% store it to Kaseya. Autotask and Network drive is used by 16.7% of the employees to store server information. Syncplicity is also used to store server information by 11.1%. Netadmin was not used to store server information and 5.6% of the employees did not store server information at all. Employees answered to the question “Why do you store the information here? Be specific” with answers like:

“Kaseya has decent inventory feature to collect data about servers. On Secret Server I put passwords and very short description about server. I put longer descriptions to wiki. ”

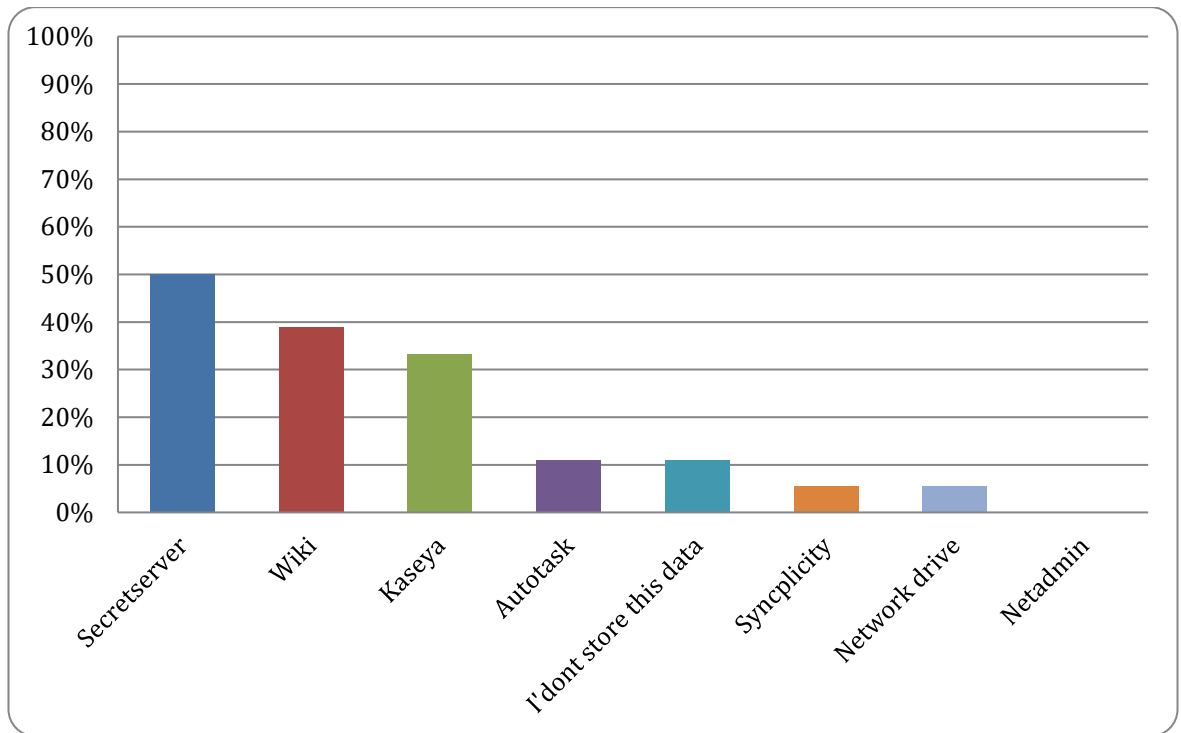
”Again. Depends. Wherever it is stored previously. New data I put in wiki.”

Translated from Finnish:

”Wiki can be used for general data about customer environment. Depending on the data quality it can be documented in SecretServer for better security.”

The employees are storing the server data to multiple platforms and there are no instructions in place for storing the data. This is a good answer: “Kaseya has decent inventory feature to collect data about servers. On Secret Server I put passwords and very short description about server. I put longer descriptions to wiki.” The main server information should be stored in Kaseya, the passwords and other sensitive information in SecretServer and longer description about the server information in wiki. The process and model should be built around this.

Graph 11 shows where employees store PC information.



Graph 11. Where employees store PC information.

50% of the employees store PC information to SecretServer. Wiki is used store PC information by 38.9% of the employees and Kaseya by 33.3% of the employees. Autotask is also used to store PC information by 11.1% of the employees and Syncplicity and Network drive are both used 5.6% of the employees. Netadmin is not used by any employee and 11% of the employees don't store this information. Employees answered to the question "Why do you store the information here? Be specific" with answers like:

"Kaseya has automatic inventory features. I don't manually document PC information, there's too much of it and its most likely to change without a notice so documentation could go out-of-date too easily."

"Not standard documentation; only on exception, workstations with special software etc."

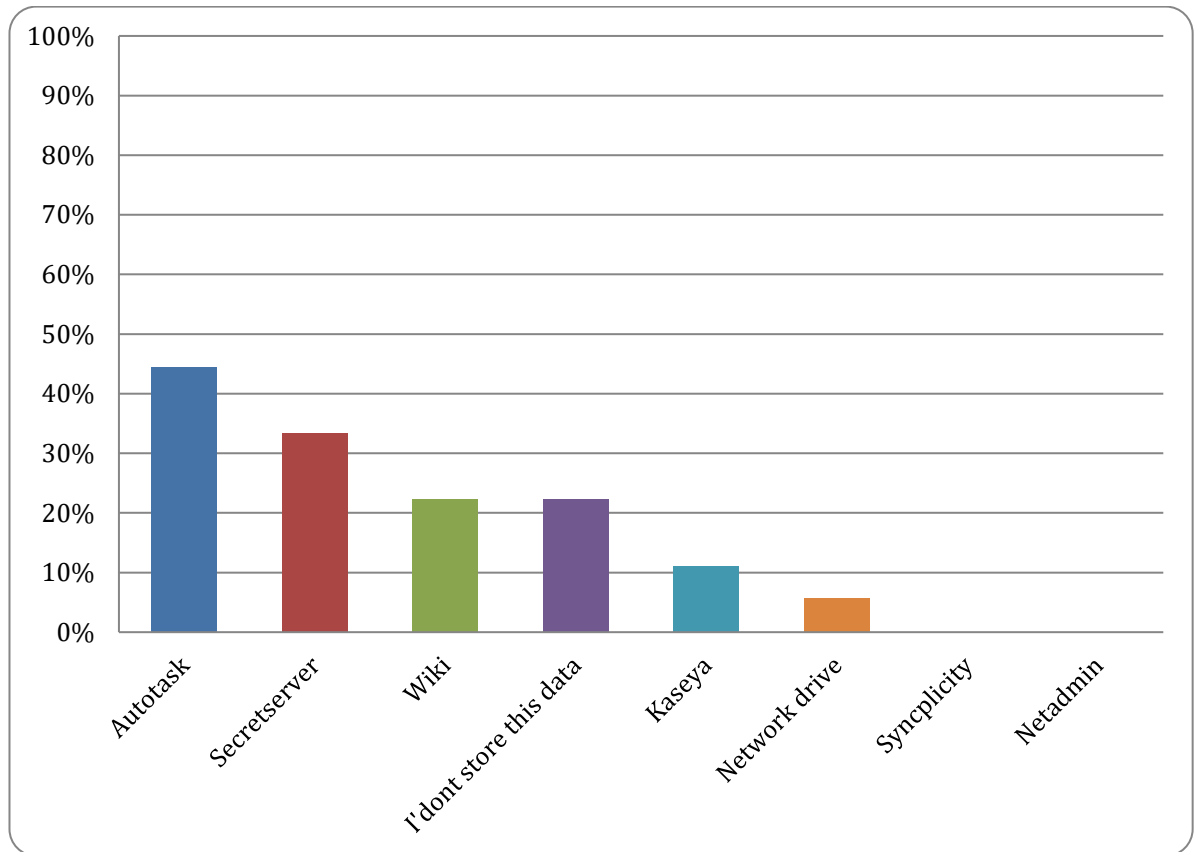
Translated from Finnish:

"If there is a need to document PC information it should be done in Wiki."

SecretServer should not be used to store PC information. Kaseya should be used instead like it is written in one of the employees answer "Kaseya has automatic inventory features. I don't manually document PC information, there's too much of it and its most likely to change without a notice so documentation could go out-of-date too easily."

As it is stated in the answer “its most likely to change without a notice so documentation could go out-of-date too easily.” This can be avoided by assigning roles, responsibilities and processes for handling this data.

Graph 12 shows where employees store user information



Graph 12. Where employees store user information.

44.4% of the employees store user information is into Autotask by the. 33.3% of the employees store the user information into SecretServer. Wiki is used to store user information by 22.2% of the employees. Kaseya is used to store customer information by 11.1% of the employees and Network drive is used by 5.6%. Syncplicity and Netadmin is not used to by employees to store User information and 22.2% of employees don't store User Information at all. Employees answered to the question “Why do you store the information here? Be specific” with answers like:

“I usually store user data if consider needed to Outlooks Address book. Autotask also has decent contact but its feels clunky to use.”

“That's whre customer information (CRM) should be”

Translated from Finnish:

“If there is need to document user information I’d probably do it in Wiki. Contact information to Autotask”

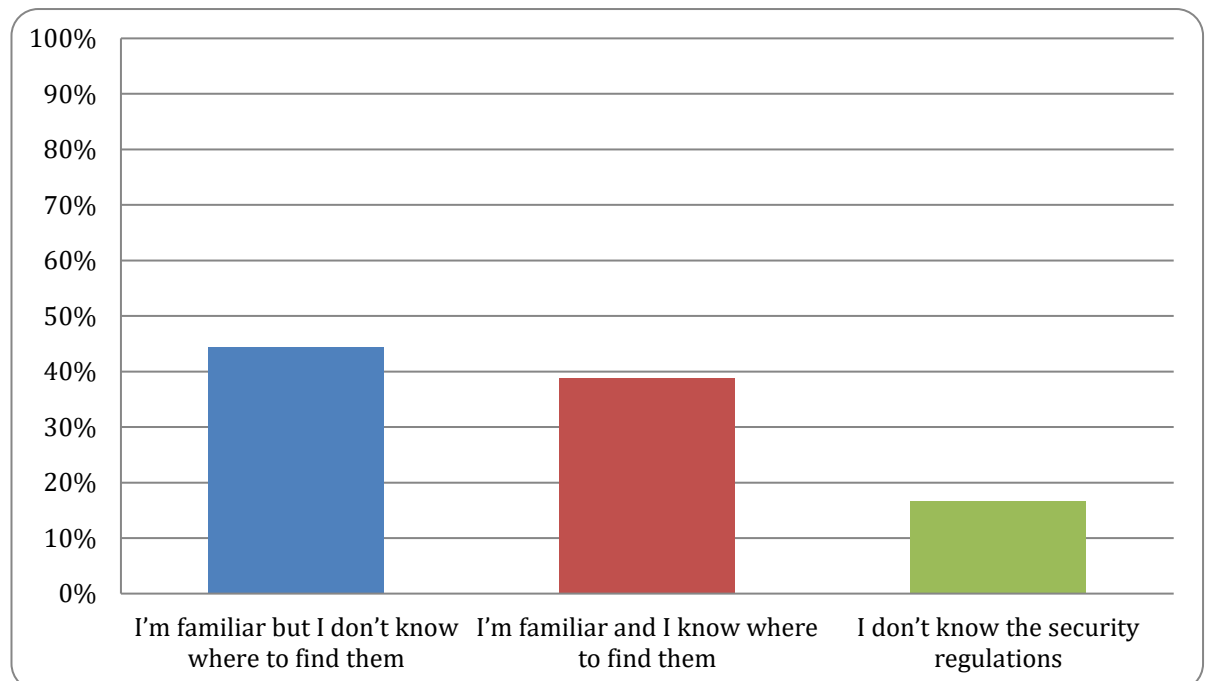
Here as it is with server information the employees store the data in to multiple systems and there is no instruction how to do it. The customers that have a maintenance agreement with the company and have Kaseya agents installed to their computers have their user information stored in Kaseya. Because Autotask is used as the ticketing system the user information master data should be there also. There is a way to bring PC, server and user information from Kaseya to Autotask. This option could be research again. It has been in use in the past but it has proved to be difficult because the integration hasn’t worked perfectly.

It should be decided which system are used for storing user data and teach employees to start using this system. Auditing inside the different systems would be ideal because it would able the department managers to follow what is done where and steer employees to the right direction if need be

Next up is chapter 4.4 security regulations and graph 13 that shows how familiar employees are with the company security regulations

4.4 Security regulations

This chapter shows employee familiarity with the case company security regulations.



Graph 13. Employee familiarity with the company’s security regulations.

44.4% of the employees are familiar with the security regulations but didn't know where to find them. 38.9% of the employees are familiar with the security regulations and know where to find them. 16.7% of the employees were not familiar with the security regulations. The employees answered to the question "If you are familiar with the regulations, what do you think of them? Are they valid? Do they need to be updated?" with answers like:

"They are rudimentary, but fairly valid. Need to be updated and added to"

"I think they are mostly relevant and up-to-date. There should be some updates where to keep them. And they should be monitoring that people follow these guidelines"

"They are valid, but might need to be implemented in the process better."

"10/10 No updates required, would follow."

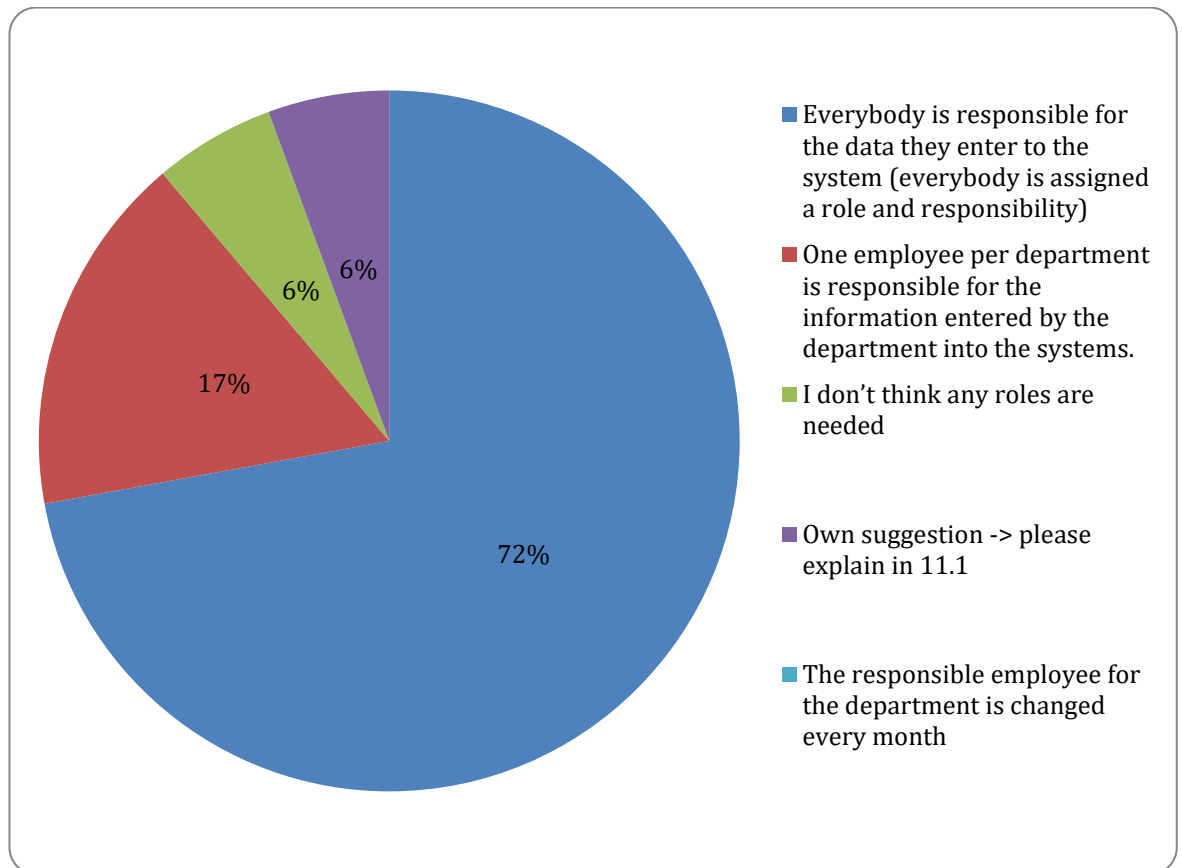
Translated from Finnish:

"I don't know where to find them but they are reviewed regularly. Validity of security regulations is key in this profession and field."

Next is chapter 4.5 roles and first up is graph 14 that shows what kind of roles the company should have chosen from different options by the employees.

4.5 Roles

This chapter shows employees attitudes towards roles and responsibilities

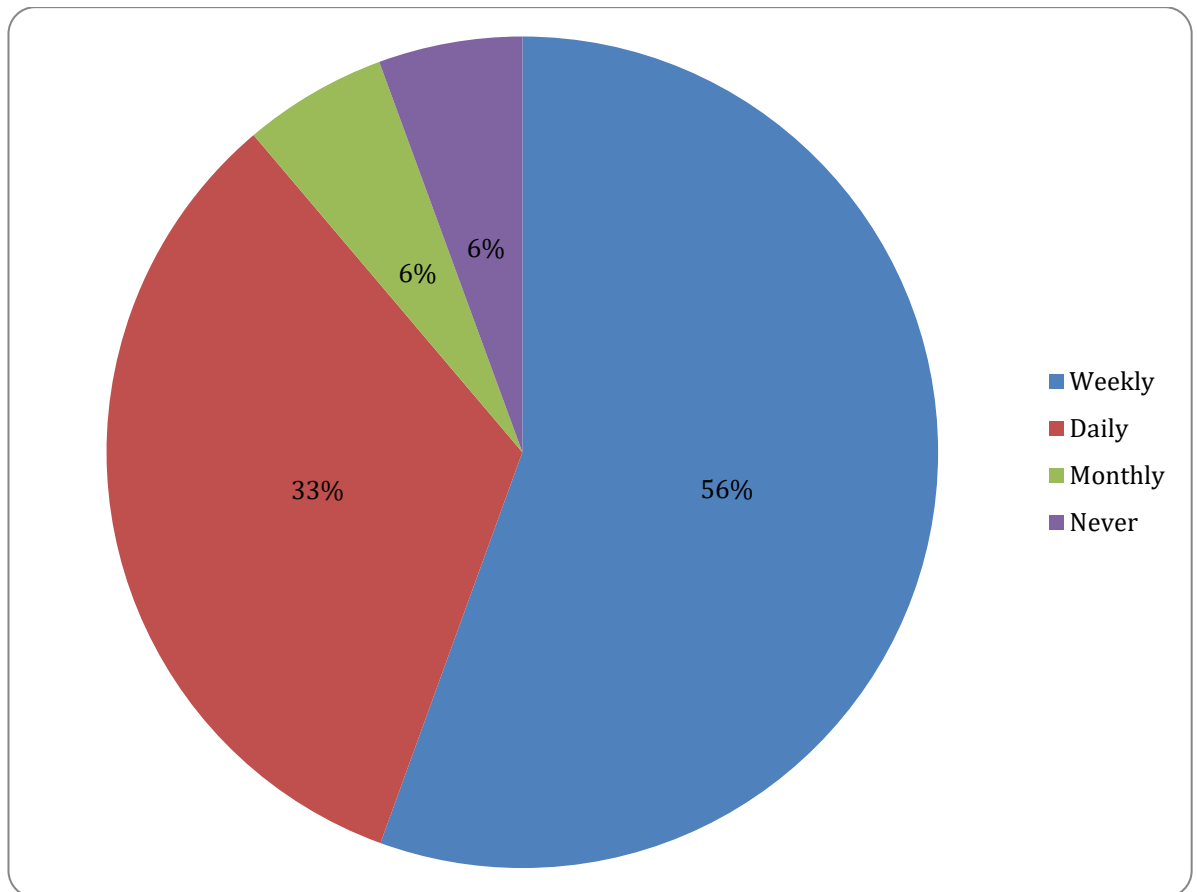


Graph 14. Roles and responsibilities for customer data handling for the case company.

72% of the employees thought when asked what kind of roles we should have for handling customer data that “Everybody is responsible for the data they enter to the system (everybody is assigned a role and responsibility). 17% thinks “One Employee per department is responsible for the information entered by the department into the systems.” 6% thinks there is no need for roles in the company and 6% had own suggestion:

“People should be responsible to about the data they enter to the system. But there should be somebody above monitoring that people actually take care about entering the data and take action if needed”

Graph 15 shows how often major changes to customer data should be informed to other employees if the company had roles and responsibilities for handling customer data.



Graph 15. How often should major changes related to the customer data should be informed for the other employees?

56% of the employees think that if the company has roles for handling customer data, major changes to the customer data should be informed to other employees weekly. 33% thinks the changes should be informed to other employees daily. 6% thinks the changes should be informed monthly and 6% thinks that the changes should never be informed to other employees. When asked: “What do you think about assigning roles and responsibilities related to handling customer data to employees? Is applying them good for the company? Does the company lose some of its agility? Be specific.” the employees answered with answers like:

“Well it might improve the documentations which in turn increases the agility of the company when people don't have to spend time hunting for information.”

“Might affect a bit to agility and speed, but overall it is really needed. Now as there are no roles and no responsibilities, people do what they want, documentation etc. suffers in time wise tight situations.”

“Customer data handling should not hinder the agility of the company if done right. Roles and responsibilities would promote better quality documentation and more organized data, with a few hours of work per week.”

”I chose: One employee per department is responsible for the information entered by the department into the systems. In addition to this I think we should have sub-roles under the responsible employee to share the workload”

“Employees should just have to sign a professional secrecy agreement and go with that.”

Translated from Finnish:

“If the data would always move through an employee that is responsible is responsible for that data it could affect documentation in a way that the responsible person would not do the documentation because they’d feel that the information is only pertinent for themselves and because they deal with it all the time it doesn’t have to be documented.

However, it is essential that employees who don’t know anything about the data don’t document it and also it is essential that employees that handling the data make sure that the data is documented”

In the answers for question: “What kind of roles should we have for handling customer data?” most of the employees are united in thinking that everyone should be responsible for the data they enter and the company should have roles and responsibilities in use. Reasoning for this is also clear with answers like: “Customer data handling should not hinder the agility of the company if done right. Roles and responsibilities would promote better quality documentation and more organized data, with a few hours of work per week.” and

“Might affect a bit to agility and speed, but overall it is really needed. Now as there are no roles and no responsibilities, people do what they want, documentation etc. suffers in time wise tight situations.”

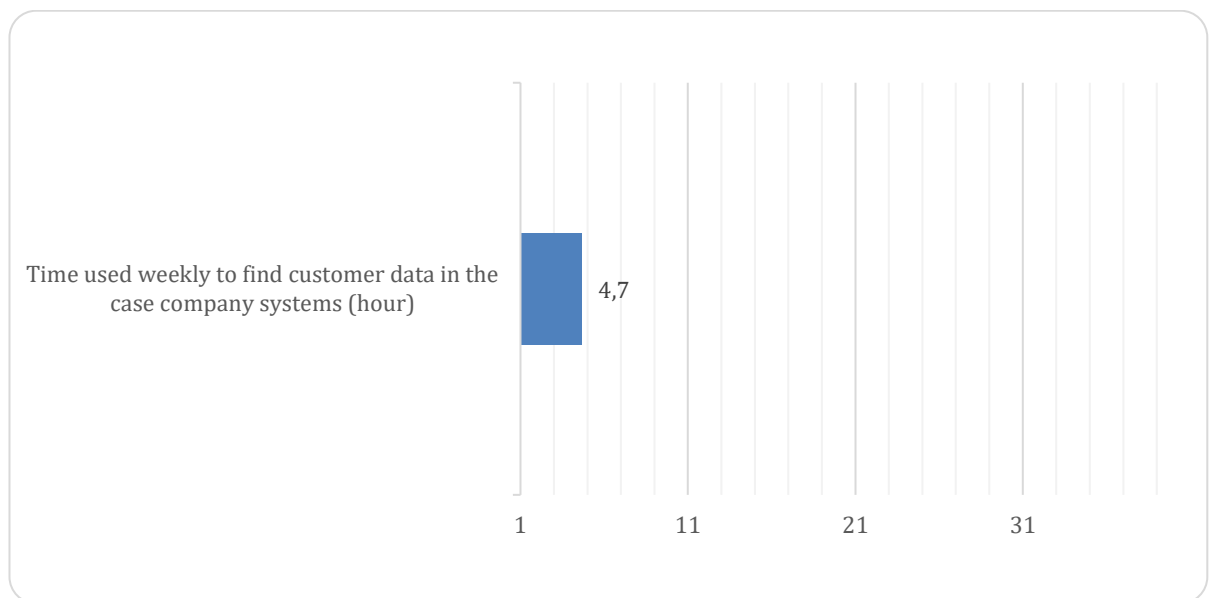
Assigning roles and responsibilities should save the company sometime in the future when searching for customer information. There was also a suggestion that there would be assigned a managerial role that would monitor the data entry.

“People should be responsible to about the data they enter to the system. But there should be somebody above monitoring that people actually take care about entering the data and take action if needed”.

Next is chapter 4.6 time used to find customer data and graph 16 showing the average time one employee uses time to find customer data in the company systems weekly.

4.6 Time used to find customer data

The employees were asked to give an estimate for how many hours they use weekly to search for customer data from different case company systems. This chapter lists the average hours used by all the employees.



Graph 16. Time used weekly to find customer data in the case company systems.

An employee uses approximately 4.7h a week for finding customer data.

An employee uses approximately 4.7 hours a week for searching customer data. When put together all employees use together 94 hours a week just for searching data. This is more than 2 full time employees weekly hours. After the model is created and in use the company should ask employees quarterly how much they use time to search data and see if the used hours go down. Cutting down this number to half would be one goal in the beginning and in the long run eliminate this all together. This can be achieved through roles and predefined places where the data is found.

Next is chapter 4.7 own suggestions. It is a collection of employee suggestions for how to rationalize work in the case company.

4.7 Own suggestions

In this chapter is collected employee suggestions about rationalizing work in the case company. Some answers were given in Finnish, those answers have been translated in to English.

The employees were asked to give suggestions for handling customer data:

“Eliminate redundant systems. We have too many places to put data in. People do it like they've "always done it"”

“Customer registry where links to documentation, asset management, projects and support (cases/tickets). Could be external program with APIs to these mentioned systems.”

”Using predefined methods/models/systems how to enter certain data. Try to keep them simple in order to make entering data more straight forward process.”

Translated from Finnish:

“Whenever there is something to report, I think it is the responsibility of the employee to make sure the information is reported for example to Autotask. This way the information is found in Autotask and all unnecessary communication is left out”

“One place where to find the information fast and reliably”

There is a need to have united way of working and steer away from “people do it the way they’ve always done it” mentality. Also some of the systems should be eliminated or combined because employees find the current setup confusing:

“Eliminate redundant systems. We have too many places to put data in. People do it like they've "always done it" ”

for example network Wiki could be used as a place where employee could get the basic customer information at a glance: “One place where to find the information fast and reliably” and if the employee should need more specific information they should be able to find it fast from the other systems like Secretserver or Syncplicity. It could also be a good idea if wiki would be used for the first place to look for basic documentation of customer data there would be links to the other places the data is stored. This to make finding it faster

“Customer registry where links to documentation, asset management, projects and support (cases/tickets). Could be external program with APIs to these mentioned systems. ”

4.8 Data collection Conclusion and discussion

According to the data collection all the company employees use Autotask with 100% of the answers and the least used system was Netadmin with 55.6% of the answers given.

Majority of employees update information in Autotask, Secretserver and Wiki with 72.2% of the answers. Least used system is Netadmin with only 11.1% of the answers given to it and no one answered that they don't update any information.

Most of the employees update password information with 88.9% of the answers selecting password. Network information and PC information is updated by 55.6% by answers given. All the employees update some information because the answer “I don't update any of the information mentioned above” was not picked.

The company's password information is most up to date in the system with only 11.1% of the employees answering it was not up to date. The information that was selected by most of the employees as being out of date is network information with 61.1% of the answers.

When asked if employees inform anyone if they change customer information in the system 44.4% of the employees answered that they don't inform anyone. The employees gave both superior and colleague 22.2% of the answers.

Sensitive data is handled daily by 67% of the employees and 6% of the employees don't handle sensitive data at all.

Over half of the employees will first find out who they can reveal sensitive information, like passwords, in the customer organization before they reveal it with 67% of the answers. 33% always know to whom they can reveal the information. No one selected the answer “I'm not always sure if I should reveal the sensitive data to the customer but I still reveal it”

88.9% of the employees store password data to SecretServer. 5.6% also stored password information in to Autotask, Kaseya and Syncplicity. Netadmin, Networkdrive and wiki is not used to store data by the employees.

Network information is stored by the employees almost in every system except Kaseya. Wiki is used most by 55.6% of the employees and Autotask is used the least with 5.6% of the answers.

Server information is also stored in almost every system except Netadmin. It is mostly stored in SecretServer and Wiki and least to Syncplicity with 11.1% of the answers.

PC information, like Server information, I stored to every system except Netadmin. 50% of the employees store the data to Secretserver. Syncplicity and Networkdrive are used the least with both getting 5.6% of the answers.

User information was mostly stored in Autotask with 44.4% of the answers and 5.6% of the employees used network drive, Syncplicity and Netadmin is not used to store this data

Under half of the employees (44.4%) are familiar with the security regulations but don't know where to find them. 16.7% of the employees don't know the security regulations.

72% of the employees think there should be roles and responsibilities and that everybody should be responsible for the data they enter to the system. 6% of the employees think there should not be any roles to handle customer data in the company.

56% of the employees think that if the company has roles and responsibilities to handle customer data major changes should be informed to the other employees weekly. 6% of the employees thought it should be done monthly or not at all.

The average between employees used to search customer data is 4.7h per week.

The data collection showed that the current situation in the company is a mess for the most parts. Employees are storing data to different systems and there is now model or guidelines at place to guide employees where to store data and employees are using sentences like "it has been always done this way". This presents a problem because if employee A has been doing

something somehow and Employee B has done the same thing another way. Both Employees believe they're doing it correctly and in a way they are because there is no model or guidelines in place. This creates redundant work when Employee A tries to find information Employee B has stored.

Based on these findings a model is needed to handle customer information from the time the customer becomes a service customer for the company, to the time the customer relationship ends. Also things to consider are where information is stored and who stores it. For an entity will be created known as customer. The entity customer represents a collection of specific customers' data in the company systems. Roles and responsibilities will be created that will be applied to the employees. Roles and responsibilities are used to specify where the data will be saved and who's responsible for saving it. It will also clarify and make easier to find data for example for service desk employee who's working on a customer ticket and needs to find customer information. Through this the average time that an employee uses weekly to search for customer information should go down also.

5 Customer data lifecycle model

The model is created based on the theory on this thesis and data collected from the company. The model gives rudimentary guidelines for customer handling from the time the customer becomes a service customer i.e. the company starts billing the customer monthly. In its simplicity the model is created from:

1. Where and when to store the customer data (chapters 6.1 and 6.5)
2. Who is responsible for storing the data (chapter 6.5)
3. How the data is handled in different parts of the customers lifecycle (chapters 6.2, 6.3 and 6.4)

The customer data lifecycle model is covered in chapters 6.2, 6.3 and 6.4. The model is made in to a collection combining those three chapter and can be found as Appendix 2 of this thesis. Suggestion for how to store the data in different systems is specified in chapter 5.1.

The model is divided in 3 main areas:

1. Birth
2. Life
3. Death

These names are used because they're easy to understand and descriptive. Chapters 6.2, 6.3 and 6.4 give detailed explanation about the areas.

5.1 Data storing

Suggestion for storing customer data across the company's different systems: Autotask, Kaseya, Syncplicity, SecretServer, Netadmin and wiki. A detailed list of datatypes per system is found in Appendix 3. General description of data stored per system is given here:

Autotask

Autotask is going to be used to store basic customer information like: name of the company, contact persons, company address. Customer sales opportunities and sales orders are also handled through Autotask and order history is stored in Autotask.

Kaseya

Kaseya contains service customer device asset for computers and servers. It also allows the company to access customer workstations and servers remotely and offers monitoring to these devices.

Syncplicity

Syncplicity is used to store customer contracts, quotes and price lists.

SecretServer

SecretServer is used for storing sensitive customer data such as passwords and usernames

Netadmin

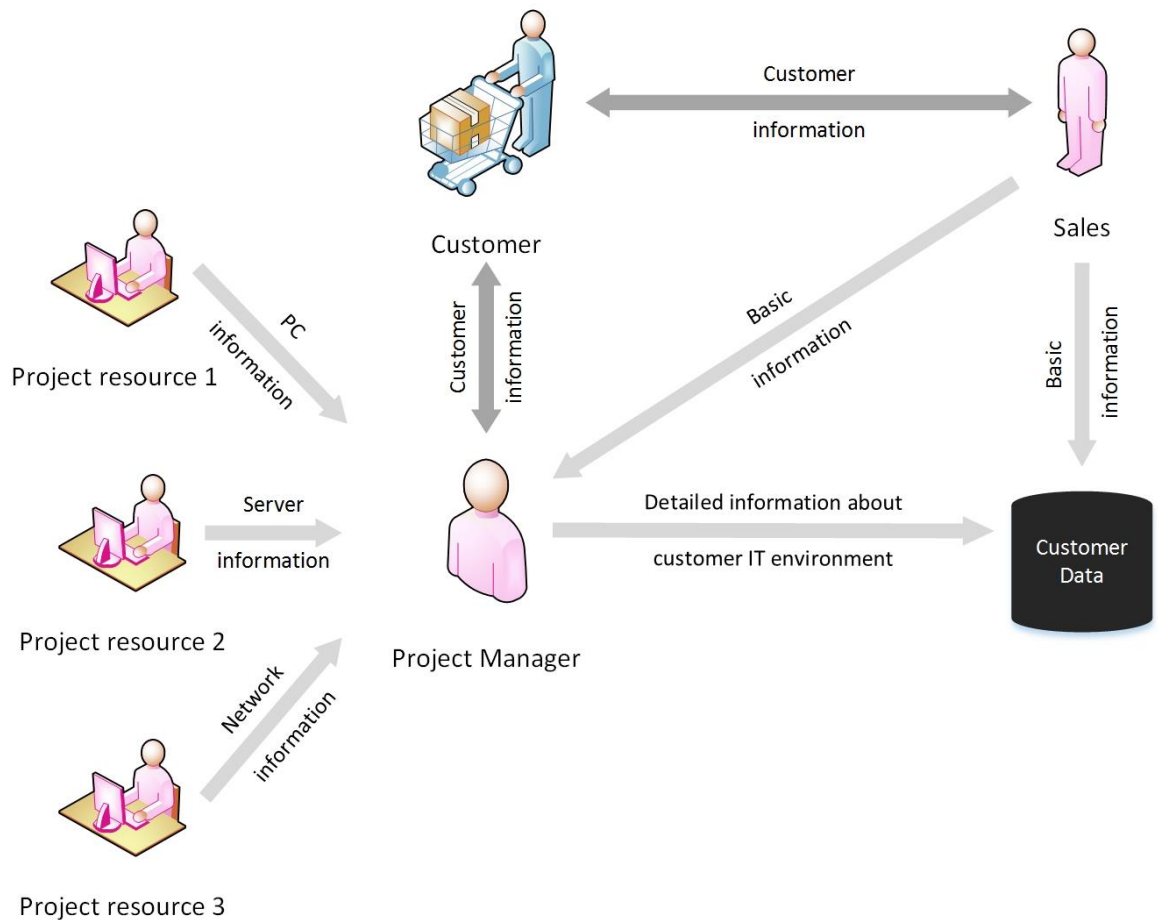
Netadmin is used to store and manage customer and company IP addresses and network configurations.

Wiki

Wiki is used to create customer documentation by collecting information from other systems to one place for a one stop shop for employees. Sensitive information is not presented in Wiki but a link to for example SecretServer is embedded to Wiki under the customer so that employee seeking the information can login to SecretServer from the link and find it there.

5.2 Birth of customer data

This chapter shows how the customer data is born into case company systems.

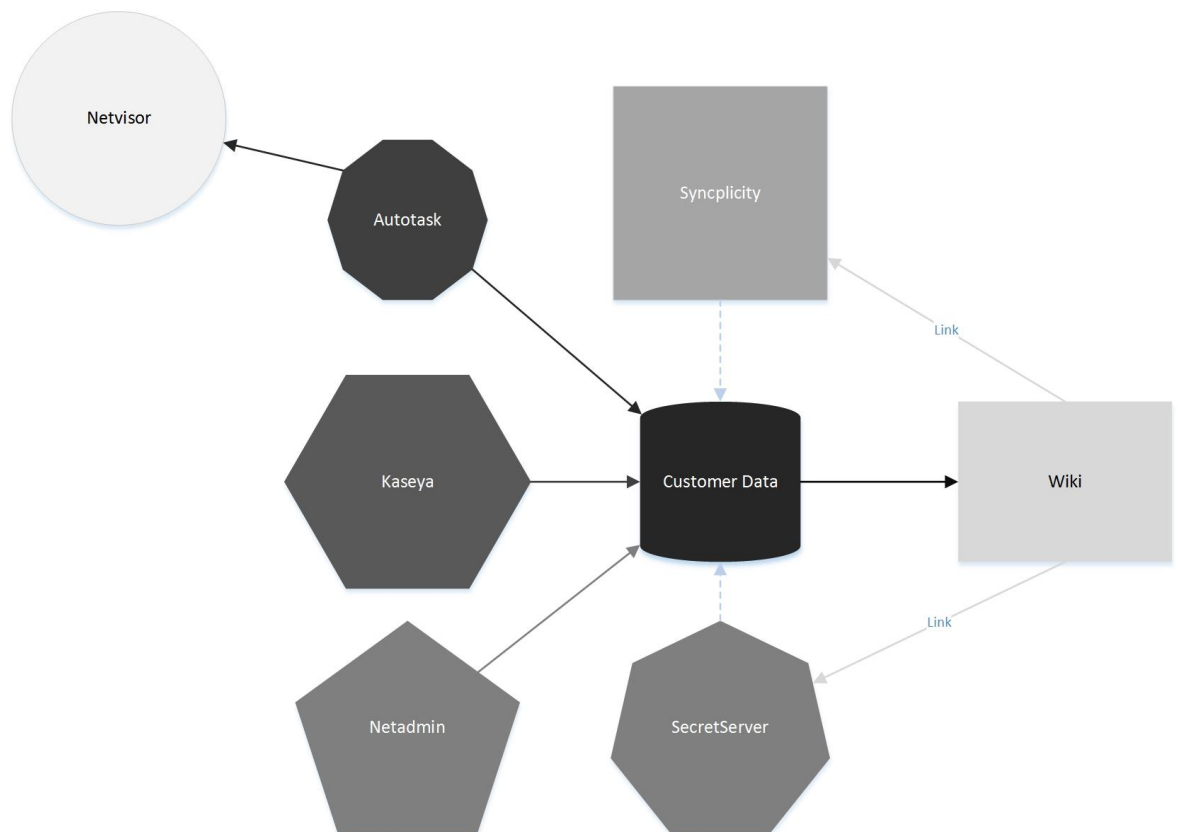


Picture 3. Customer data birth.

Picture 3 customer data birth shows how the customer is born in the company systems after Sales has created the basic information to Autotask. This is enough if the customer only orders hardware from the company but no services. In the case of the customer becoming a service customer Sales creates the basic information to Autotask and starts a project. During the project project manager is responsible for the data that will be collected to create customer data. The project manager communicates with, sales, customer and different executors used for the project. The project resources are assigned according to the project. For example if the customer does a maintenance service agreement for computers, servers and network, the project resources will come from NOC, servicedesk and network departments. For this example case following roles will be used: sales manager, project manager, NOC administrator, network administrator and technician. Roles are explained in chapter 5.5.

During the project installation is done and information is collected in to different systems as laid out in chapter 6.1. In the end of the project the project manager makes sure that all necessary information is stored correctly. As an end result the customer is born in the company systems.

Picture 4 shows how the case company's systems create the customer data.

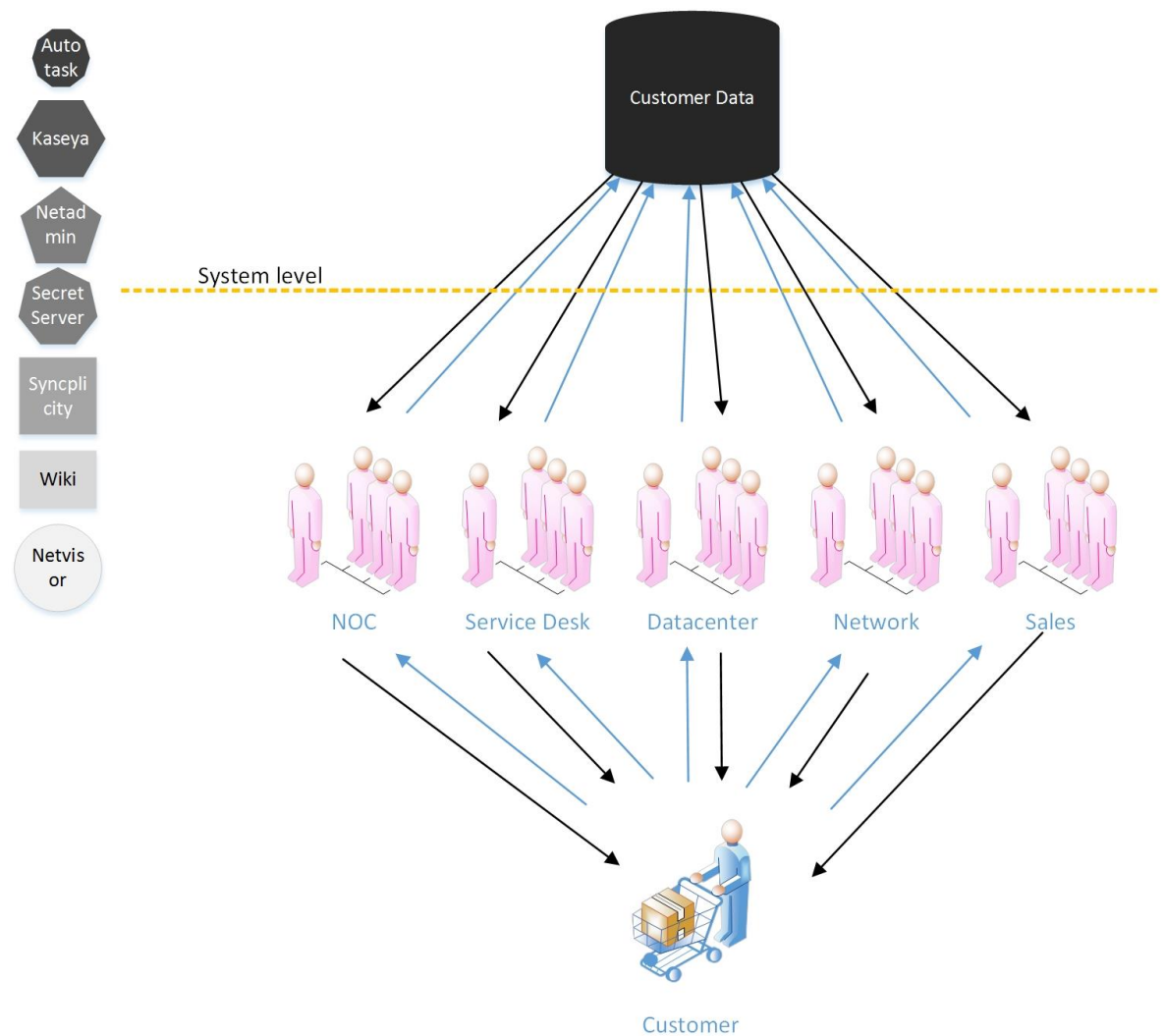


Picture 4. Customer data visualization.

The customer data is created through the different systems as shown in picture 4. Customer data visualization. Autotask, Kaseya, Netadmin, SecretServer and Syncplicity together form the customer data. Wiki acts as a single view for these systems. Autotask, Kaseya and Netadmin information can be displayed in wiki but SecretServer information is behind a link to SecretServer because of the sensitive information it contains. Syncplicity information has a link to them also because it contains word, PDF, Excel documents and Wiki is not a file storing system. Netvisor is shown here as billing information from Autotask is going to Netvisor which is used to bill customer.

5.3 Life of customer data

This chapter shows how the customer data is handled in day to day operations after it has been created in to the case company systems.

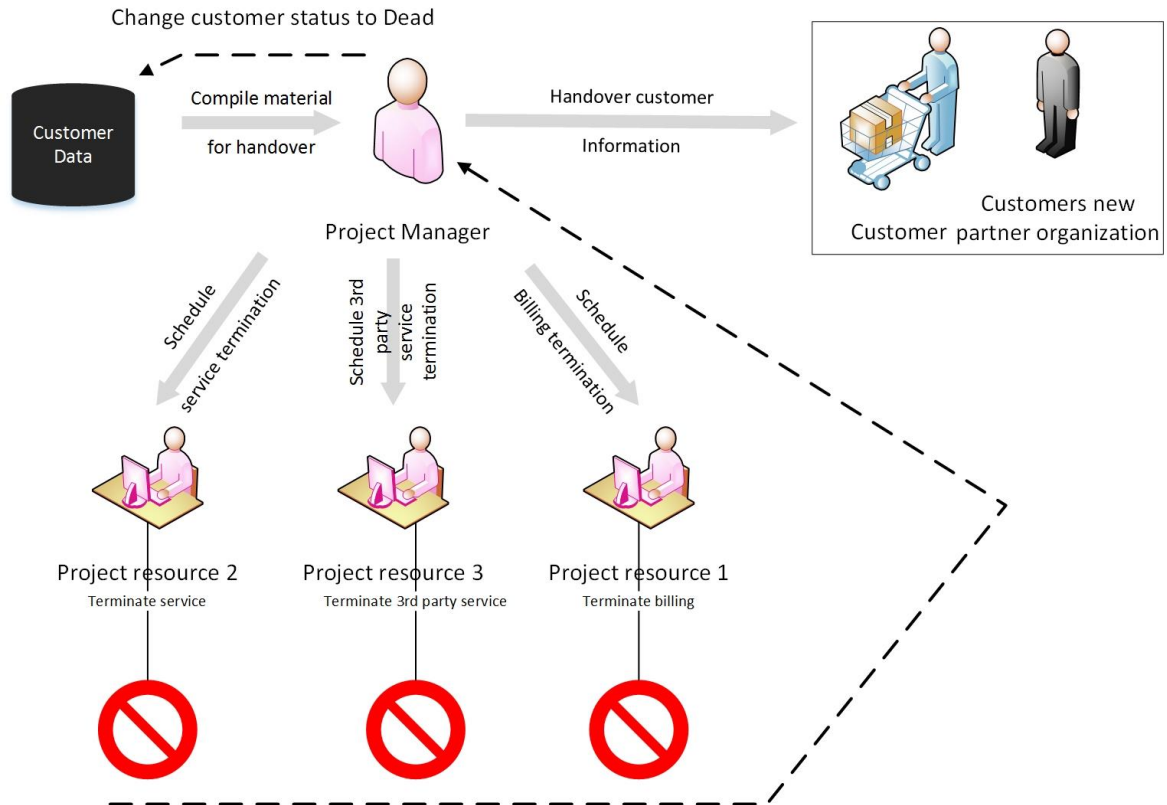


Picture 5. Customer data life.

During the life of the customer, depicted on picture 5, all different departments use and update the customer information according to roles and responsibilities specified in chapters 6.5. The Departments communicate with the customer and do changes to the customer data. For example add and remove computer information or update billing information. In picture 4 the blue arrows represent the data the company gets from the customer during the life of the customer data. the data flows through different departments to the different company systems, detailed in chapter 6.2, which in turn keep the customer data up to date. This information can be for example new address or new employee etc. The black arrows represent data the company provides the customer, for example the customer needs to know their IP-address for one of their locations. Data is updated and added throughout the life of the customer data.

5.4 Death of customer data

This chapter describes what happens to the customer data after the case company and the customer end their relationship.



Picture 6. Customer data death.

When the customer relationship is terminated the customer data is handed over to the customer and / or customers new service partner. As shown in picture 6 customer data death project manager will compile a document using project resources from different departments if needed. Project manager will notify the billing administrator when to end customer billing and give notice to external vendors if such vendors are used with particular customer. Project manager will create a time table and select resources for removing company software from customer environment. After the customers services and billing are terminated and the customer data is passed on to the customer and / or customers new service partner, the project manager will mark the customer as dead in the system and give an explanation why the customer relationship was terminated.

5.5 Suggestion for customer data handling roles and responsibilities

The roles are created as explained in chapter 3.2 based on ITIL roles. Roles will clarify the company operating models by assigning employees to handle different data. The roles and responsibilities combined with the model and the places specified to retain the different data should make customer data management much clearer than it is currently. The roles and role descriptions are described here. Detailed role descriptions with key activities can be found as Appendix 4.

Role	Description
Sales Manager	Responsible for entering the customer data correctly to Auto-task. First point of contact for the customer in the beginning of the customer lifecycle.
Project Manager	This role is used when a new customer project is created. The Project Manager is responsible for creating a detailed documentation of the customer environment after the sales managers initial documentation
Billing Administrator	Communicates with sales, technicians and NOC. Responsible for keeping customer billing accurate
NOC Administrator	Maintains customer server environment and keeps documentation and Kaseya information up to date
Network Administrator	Responsible for keeping company and customer network information up to date in Netadmin and Autotask
Datacenter Administrator	Maintains Company and customer datacenters. Responsible for keeping customer datacenter documentation up to date
Technician	Responsible for updating workstation/server information in to Kaseya after new installation
Dispatcher	Responsible for arranging timetables for installation work.
Back office	Responsible for ordering hardware and services from vendors. Responsible for documenting order history

Table 3. roles and role descriptions for case company.

Table 3 shows the roles, which can be assigned to employees, on the left column. The right column shows the description explaining the corresponding role from the left column.

6 Roadmap and development plan

A detailed roadmap for the development plan is found as appendix 4. If the company chooses to go ahead with the suggested model and roles the end of Q4 2017 should be used to finalize the model and roles to reflect on the company's current needs and prepare a survey based on the survey used for collecting data for the thesis. The survey should be conducted four times during 2018 starting in the beginning of January, then on start of April, then after vacations in the end of August and finally in December. Idea in the survey is to see how employees receive the new model and roles and does finding customer information become less time consuming over time. The data from the survey will be analyzed with department heads and possible correction will be made to the model and roles if they are needed.

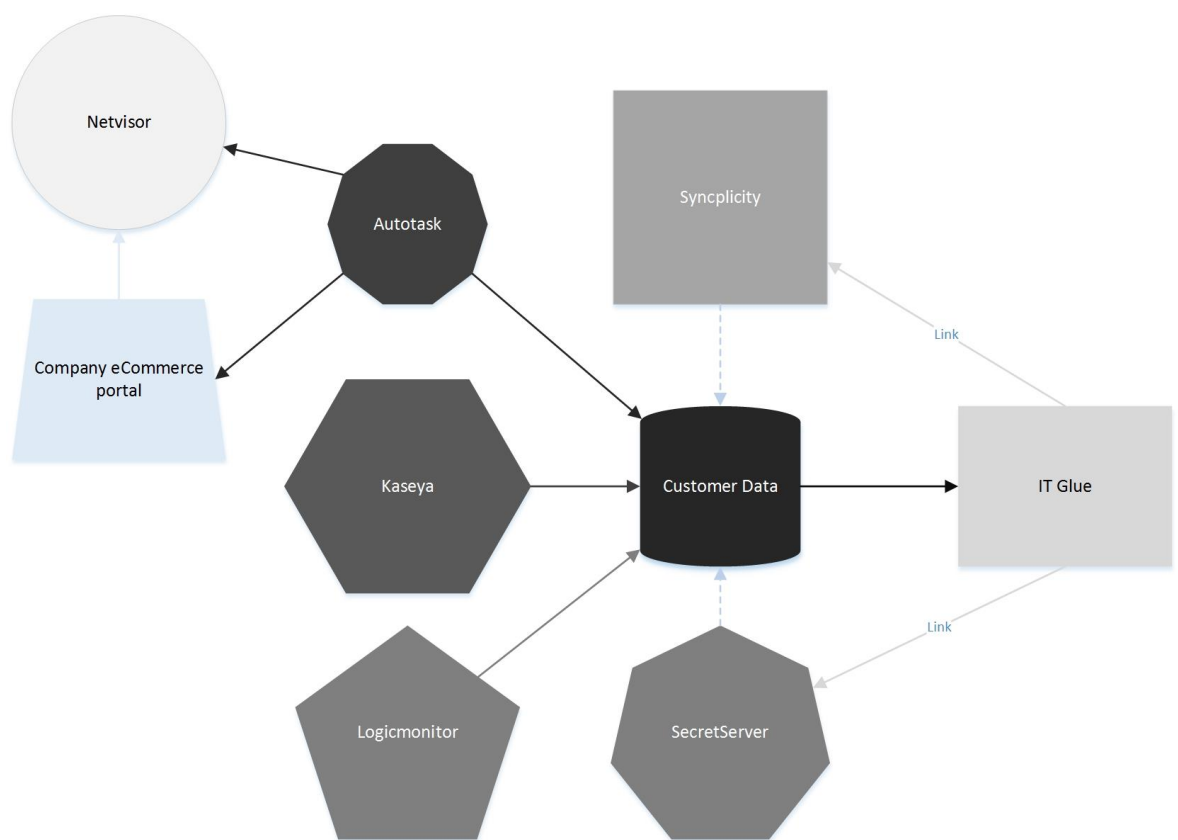
Department heads will be in key role during the roll out. Meetings will be held with them weekly in the beginning and then reduce the meetings from weekly to semimonthly to monthly to quarterly and in the end after the model and roles accepted as common practice in the company the review meetings should be kept twice a year to see if any changes should be made or more roles should be added. Company Management is kept informed quarterly during the roll out.

7 Discussion

Writing the thesis took longer than planned and the company has taken some steps. The company was re-structured from inside and a new management has been put together to govern the company. The new management consists of long time employee and partners who have years of experience from the field and working closely with the company's customers and partners. This is a huge change from the previous where at one point the company was without a CEO and any kind of real management for two to three years and before that the company had a CEO that was hired from outside and didn't really know the business, he was more of sparring kind of CEO.

The new management is steering the company in more process based and controlled model for working. For example, they raised different people from different departments to act as head of those departments and this has already made operating within the company much clearer.

The company has also purchased a new software called IT Glue for storing data which has been made the number one spot for gathering customer information, part from passwords and other confidential data which are stored in SecretServer. This has made information finding easier for everyone. The work is still in progress and is not complete but the company is moving in the right direction. IT Glue is also connected to our MSP where we get customer machine audit automatically to IT Glue. IT Glue replaced wiki which was depicted in the questioner original model seen in chapter 5.2. The company also purchased Logic monitor that will replace Netadmin as the network monitoring system and the company also launched their ecommerce portal which enables customers to purchase hardware like laptop computers directly from the web.



Picture 7. Customer data visualization 2017.

Picture 7 shows the current customer data visualization using IT Glue instead of Wiki, Logic monitor instead of Netadmin and ecommerce portal is added to the mix also. The functionality is same with IT Glue and Logic monitor as it was with Wiki and Netadmin in picture 4. The ecommerce portal is linked to Autotask where it gets the customer account and contact person information and billing is made directly from ecommerce portal to Netvisor.

Basis for an operating model for customer management is created based on this thesis. The case company is welcome to build on the model as it sees fit. The roadmap suggests that the

company would start to follow and develop processes in all customer lifecycle model phases. Here the processes would be checked with department heads and continuously developed through employee and customer feedback

As an ongoing project the company has started having internal meetings where it has delved into areas that need developing. I've constructed a crisis communication guideline with help of the company service desk manager and steering group (CEO and COO). The guidelines have been introduced to the employees and are in use. Next development will be about hardware delivery processes.

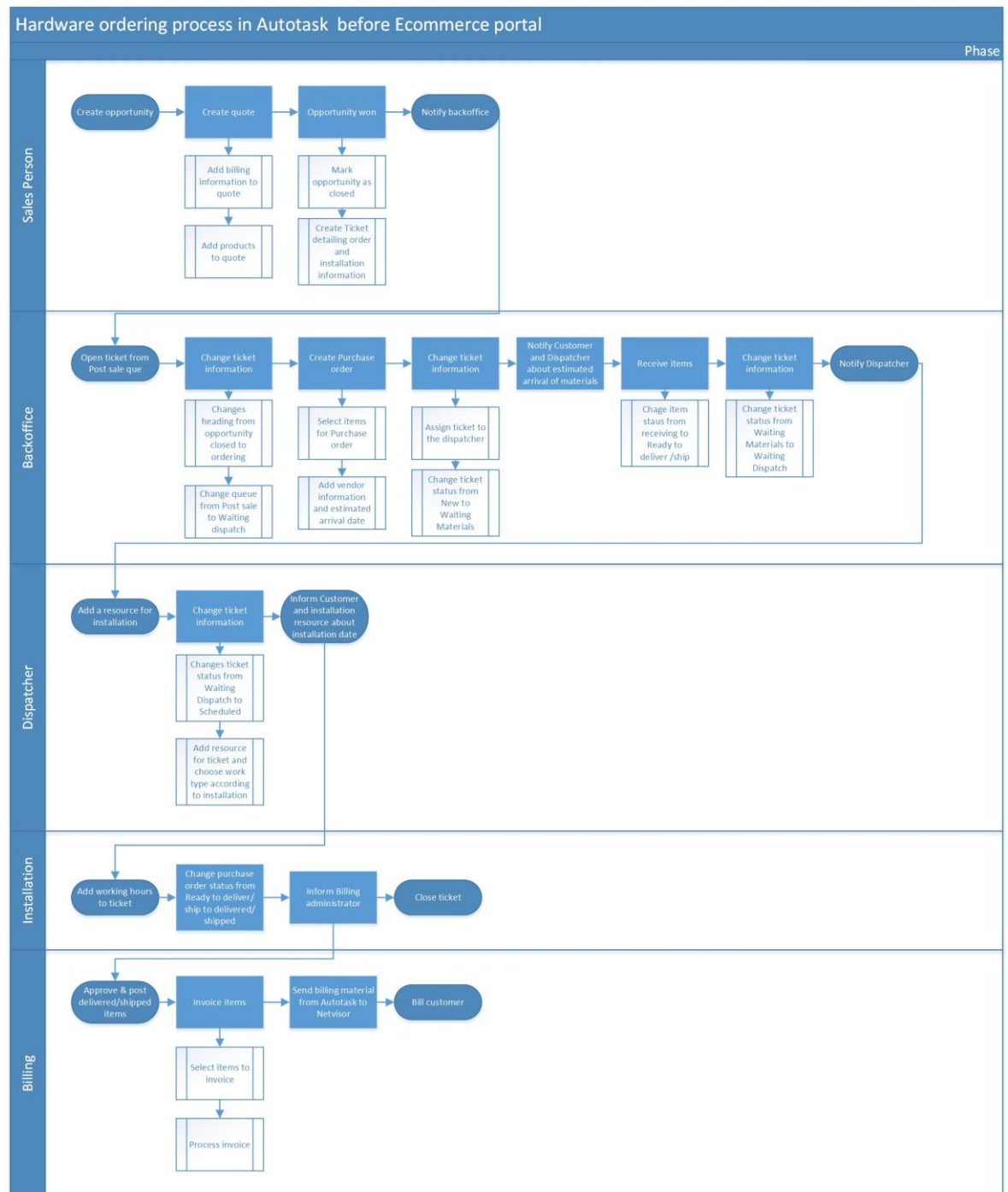
The Company decided to revive the ecommerce portal that was eliminated few years earlier. I've been working on it for the past year. This ties in to the thesis also from the view point of waste elimination. By steering a large part of the hardware purchasing to the ecommerce portal I have freed the company's sales team to concentrate on selling the company's core business, services.

Picture 8 in the following page shows how the hardware ordering process was executed before the ecommerce portal. Sales person had to create an opportunity and a quote in Autotask. Then they had to run the won opportunity wizard and create a ticket to Autotask detailing order and installation information.

After sales person was done with their part they had to inform back office employee who in turn had to open the ticket and change some ticket information and create a purchase order into Autotask, change the ticket information after creating the purchase order, assign the ticket to the dispatcher, inform the dispatcher and customer about the estimated time of the materials. After the materials arrived the back office employee had to change the purchase order status in Autotask and again changes ticket information from waiting materials to waiting dispatch and informs the dispatcher that the materials have arrived.

Dispatcher then assigns an available resource for the ticket as the employee that will do the installation and books the date for the installation. After the hardware is installed the installer adds worked hours to the ticket and changes purchase order status from ready to deliver / ship to delivered / shipped. In addition to these functions employee informs billing administrator that the materials are ready for billing and closes the installation ticket.

Finally the billing administrator approve and posts the materials in Autotask invoices the items, sends the billing materials from Autotask to Netvisor and sends the invoice to the customer.

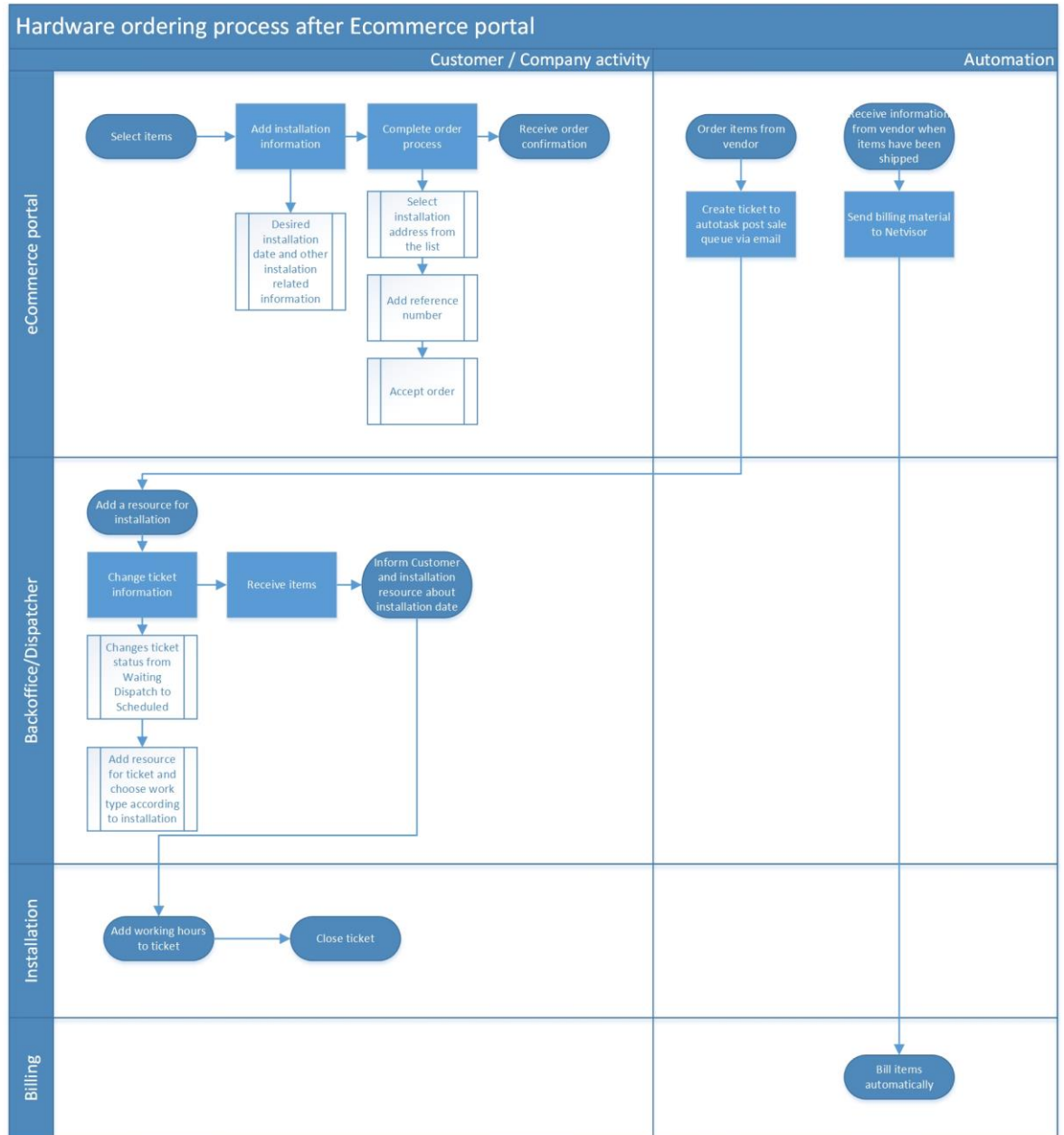


Picture 8. Customer hardware ordering process before ecommerce portal.

After the case company started to use the ecommerce portal and automated some of the functions the process became much more effective. Picture 9 in the following page shows how the hardware ordering is done currently. The customer or case company employee in behalf of the customer selects desired items in the ecommerce portal, adds the installation information to the order. After this they complete the order and receive an order confirmation from the ecommerce portal. When the order is completed the automation handles the order from the hardware vendor and creates an installation ticket to Autotask into post sale ticket queue.

Back office employee and dispatcher responsibilities are now handled by the same employee. Back office / dispatcher selects the ticket from post sales ticket queue and selects a resource for installation and change ticket information. After the items have been received the back office / dispatcher employee informs the customer and installation resource about the installation date.

Ecommerce automation gets notified when materials are shipped from the vendor. This triggers billing functions and the ecommerce automation sends billing materials including hardware serial numbers to Netvisor where an invoice is created and sent automatically to the customer.



Picture 9. Customer hardware ordering process after ecommerce portal.

By adding the ecommerce automation the case company has reduced significantly time that is used for handling hardware orders and it has also reduced the chance for errors by combining back office and dispatcher responsibilities to one person.

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Appendices

Appendix 1 Questions

Question 1: What systems are you using? (Multiple choice)

- Autotask
- Kaseya
- Syncplicity
- Secretserver
- Netadmin
- Wiki
- Network drive

Question 2: Do you update customer information to the system? (Check the box if you do update)

- Autotask
- Kaseya
- Syncplicity
- Secretserver
- Netadmin
- Wiki
- Network drive

Question 3: What information do you update? (Multiple choice)

- Passwords
- Network information
- Server information
- User information
- PC information
- Open field for own answer

Question 4: Which information is not up to date? (Multiple choice)

- Passwords
- Network information
- Server information
- User information

- PC information
- All the information is up to date
- Open field for own answer

What is the biggest problem in customer data handling at the moment? Be specific.

- Open field for own answer

Question 5: If I change customer information in the system I inform: (multiple choice)

- My superior
- My colleague
- I add the information to a ticket
- I don't inform any one.

Question 6: I handle sensitive customer data (e.g. passwords)?

- Daily
- Couple of times a week
- Couple of times a month
- I don't handle sensitive customer data

Question 7: When I handle sensitive customer data (e.g. passwords) I:

- I always know who in the customers organization I'm allowed to reveal sensitive data
- I'm not always sure if I should reveal the sensitive data to the customer
- I haven't thought about these things and I give all the information to the customer no matter who in the customer organization asks for it.

Question 8: Choose the platform/s where you store:

Passwords

- Autotask
- Kaseya
- Syncplicity
- Secretserver
- Netadmin
- Wiki
- Network drive
- I don't store this data

Why do store the information here? Be specific.

- Open field for own answer

Network information

- Autotask
- Kaseya
- Syncplicity
- Secretserver
- Netadmin
- Wiki
- Network drive
- I don't store this data

Why do store the information here? Be specific.

- Open field for own answer

Server information

- Autotask
- Kaseya
- Syncplicity
- Secretserver
- Netadmin
- Wiki
- Network drive
- I don't store this data

Why do store the information here? Be specific.

- Open field for own answer

User information

- Autotask
- Kaseya
- Syncplicity
- Secretserver
- Netadmin
- Wiki

- Network drive
- I don't store this data

Why do store the information here? Be specific.

- Open field for own answer

PC information

- Autotask
- Kaseya
- Syncplicity
- Secretserver
- Netadmin
- Wiki
- Network drive
- I don't store this data

Why do store the information here? Be specific.

- Open field for own answer

Question 9: I'm familiar with the company's security regulations and I know where to find them

- I'm familiar and I know where to find them
- I'm familiar but I don't know where to find them
- I don't know the security regulations

If you are familiar with the regulations, what do you think of them? Are they valid? Do they need to be updated?

- Open field for own answer

Question 10: What kind of roles should we have for handling customer data?

- One employee per department is responsible for the information entered by the department into the systems
- The responsible employee for the department is changed every month
- Everybody is responsible for the data they enter to the system (everybody is assigned a role and responsibility)
- I don't think any roles are needed

Question 11: If the company has roles for handling customer data, major changes related to the customer data should be informed for the other employees:

- Weekly
- Monthly
- Never

What do you think about assigning roles and responsibilities related to handling customer data to employees? Is applying them good for the company? Does the company lose some of its agility? Be specific.

- Open field for own answer

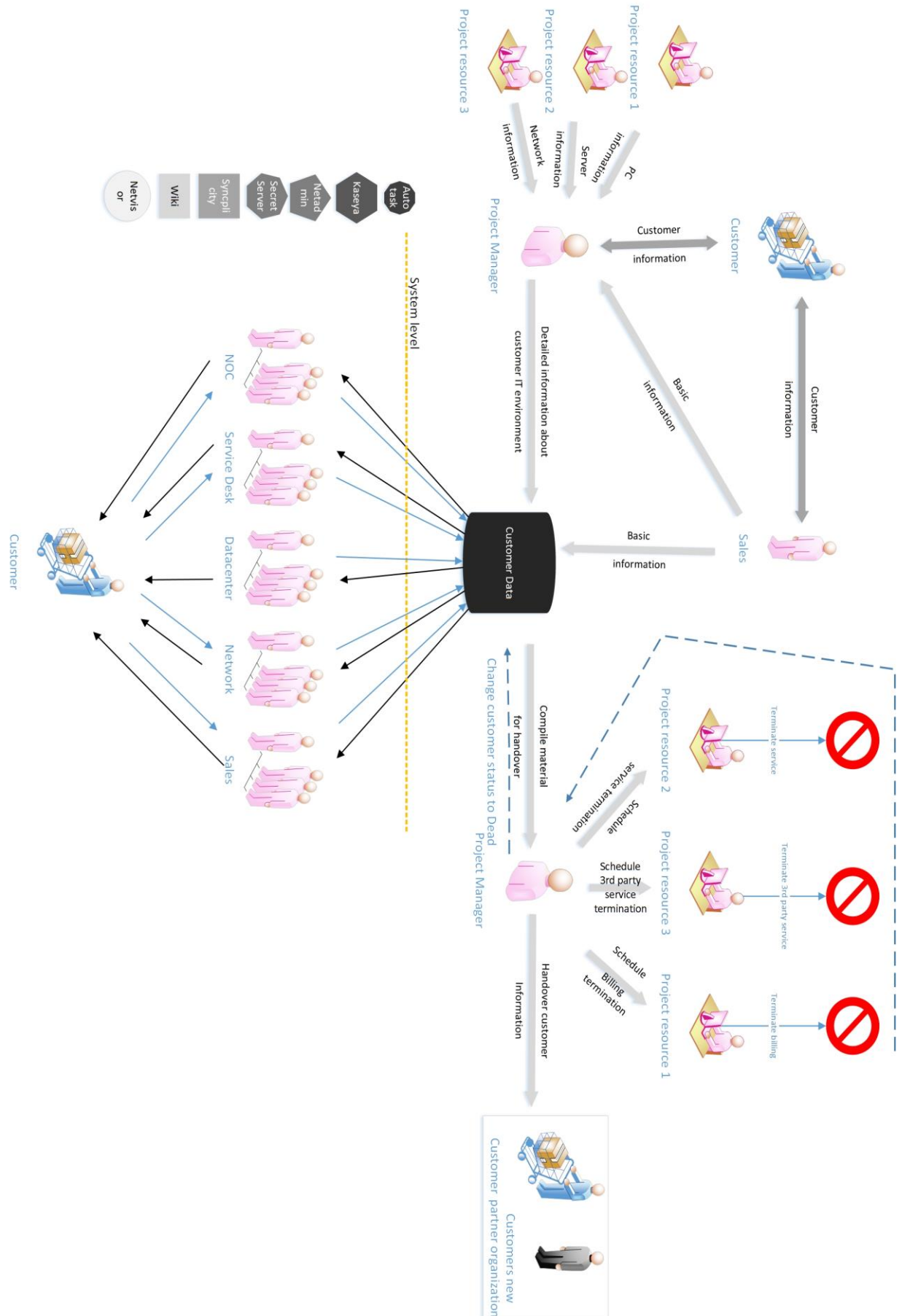
Question 12: How much time do you use approximately every week for finding customer data? (Sliding scale)

- 30min...37,5h

Question 13: Suggestions for handling customer data. (Open question)

- Open field for own answer

Appendix 2 Customer Data Lifecycle Model



Appendix 3 What data to store in which system

Autotask

Masterdata for:

- Customer information
 - Customer Name
 - Delivery address
 - Billing information
 - Contact persons
- Ticket system data
- Billing data
 - Products
 - Services
 - Worked hours
- Product names
- Service names
- Billing roles for work

Kaseya

Master data for:

- Device asset
 - Laptop
 - Machine ID
 - Last Check-in
 - Last Logged In
 - Manufacturer
 - Product
 - Serial Number
 - Operating system
 - Workstation
 - Machine ID
 - Last Check-in
 - Last Logged In
 - Manufacturer
 - Product
 - Serial Number
 - Operating system
 - Server
 - Physical Server
 - Machine ID
 - Last Check-in
 - Last Logged In
 - Manufacturer
 - Product
 - Serial Number
 - Operating system

- Virtual Server
 - Machine ID
 - Last Check-in
 - Last Logged In
 - Manufacturer
 - Product
 - Serial Number
 - Operating system

Syncplicity

- Sales
 - Sales materials
 - Product information
 - Pricing
- Customer
 - Customer information
 - Contracts
 - Offers
 - Customer specific documentation

Secretserver

- Usernames
- Passwords

Netadmin

- Network information

Wiki

- Collection of customer environment data

Appendix 4 Roles and responsibilities

Role	Description
Sales Manager	Responsible for entering the customer data correctly to Autotask. First point of contact for the customer in the beginning of the customer lifecycle.
Project Manager	This role is used when a new customer project is created. The Project Manager is responsible for creating a detailed documentation of the customer environment after the sales managers initial documentation
Billing Administrator	Communicates with sales, technicians and NOC. Responsible for keeping customer billing accurate
NOC Administrator	Maintains customer server environment and keeps documentation and Kaseya information up to date
Network Administrator	Responsible for keeping company and customer network information up to date in Netadmin and Autotask
Datacenter Administrator	Maintains Company and customer datacenters. Responsible for keeping customer datacenter documentation up to date
Technician	Responsible for updating workstation/server information in to Kaseya after new installation
Dispatcher	Responsible for arranging timetables for installation work.
Back office	Responsible for ordering hardware and services from vendors. Responsible for documenting order history

Sales Manager	
Description	Key Activities
Responsible for entering the customer data correctly to CRM. First point of contact for the customer in the beginning of the customer lifecycle. (http://www.itsmcommunity.org/downloads/ITIL_Role_Descriptions.pdf)	<ul style="list-style-type: none"> Filling in initial customer information into Autotask (Customer name, address, contact person information, VAT-number, netvisor customer number) Changing customer status from lead -> prospect -> customer Work closely with project manager and technical specialists when bringing in a new customer

Billing Administrator	
Description	Key Activities
Communicates with sales, technicians and noc. Responsible for keeping customer billing accurate	<ul style="list-style-type: none"> • Keeping customer monthly billing up to date • Working closely with other departments to know changes in customer billing environment • Keeping configuration item information up to date in Autotask • Contract termination from Autotask • Contract termination to the supplier when a service is through a supplier

NOC Administrator	
Description	Key Activities
Maintains customer server environment and keeps documentation and Kaseya information up to date	<ul style="list-style-type: none"> • Does proactive maintenance on the company and customer server environments • Keeps customer machine library up to date in Kaseya • Communicates changes in maintained customer machines to Billing Administrator • Keeps customer passwords regarding servers up to date in SecretServer

Network Administrator	
Description	Key Activities
Responsible for keeping ITaito Oy and customer network information up to date in Netadmin and Autotask	<ul style="list-style-type: none"> • Keeps customer IP – information up to date in Netadmin and Autotask • Makes customer network map from multisite network environments and keeps them up to date • Keeps customer firewall list up to date in Netadmin and Autotask • Keeps customer firewall passwords up to date in SecretServer

Datacenter Administrator	
Description	Key Activities
Maintains ITaito and customer datacenters responsible for keeping documentation up to date	<ul style="list-style-type: none"> • Keeps documentation of BRS systems for the company and customer up to date • Monthly reports on used data levels on services to Billing Administrator • Communicates with NOC Administrator about server maintenance issues.

Project Manager	
Description	Key Activities
This role is used when a new customer project is created. The Project Manager is responsible for creating a detailed documentation of the customer environment after the sales managers' initial documentation	<ul style="list-style-type: none"> • Oversees and is responsible for the finalized documentation of customer projects. This documentation will be the detailed documentation of the customer IT environment • Communicates with Sales about possible changes in project customer environment • Communicates with technical specialist about project progress • Communicates with customer about project progress • Communicates with Billing Administrator billing starting dates and billable units

Technician	
Description	Key Activities
Responsible for updating workstation/server information in to Kaseya after new installation	<ul style="list-style-type: none"> • Documents new entries to the customer machine list in Kaseya • Documents changes to the customer machine list in kaseya • Removes old machine information from Kaseya when removing the Agent from the machine • Communicates with Billing Administrator about changes and new entries

Dispatcher	
Description	Key Activities
Responsible for arranging timetables for installation work	<ul style="list-style-type: none"> • Follows post sale tickets in Autotask • Communicates and arranges installation timetables with customer • Communicates changes to the timetable to the customer and company resource • Books resources / resources for the installation • Communicates to Billing Administrator when the installation is done and hardware can be billed from customer

Backoffice	
Description	Key Activities
Responsible for ordering hardware and services from vendors	<ul style="list-style-type: none"> • Follows post sale tickets in Autotask • Orders hardware and 3rd party services from vendors • Communicates to dispatcher when the hardware arrives and when 3rd party services will be installed.

Appendix 5 Roadmap schedule

Q4 2017 Finalization

- Finalizing model and roles. Get go ahead from Company Management
- Create an employee survey about operating models and roles

Q1 2018 Deployment phase 1

January 2018

- Conduct an employee survey about operating models and roles
- Analyze survey results with department heads
- Revising model and roles with department heads

February 2018

- Deploying model and roles across the departments
- Weekly review meetings with department heads to see what works and what doesn't
- Make changes to model and roles if necessary

March 2018

- Reduce weekly meetings to semimonthly meetings if possible

Q2 2018 Deployment phase 2

April 2018

- Conduct an employee survey about operating models and roles
- Compare survey results to previous survey results
- Analyze survey results with department heads
- Make necessary changes

May 2018

- Reduce semimonthly meetings to monthly meeting if possible

June 2018

- Meet with department heads
- Report results to company management

Q3 2018

July 2018

- Reduce monthly meetings to quarterly meetings if possible

August 2018

- Conduct an employee survey about operating models and roles

- Compare survey results to previous survey results

September 2018

- Analyze survey results with department heads
- Make necessary changes

Q4 2018

December 2018

- Conduct an employee survey about operating models and roles
- Compare survey results to previous survey results
- Analyze survey results with department heads
- Make necessary changes
- Report results to company management

H1 2019

- Arrange meeting with department heads twice a year
- Send employee survey twice a year
- Report to company management twice a year
- Make this recurring process